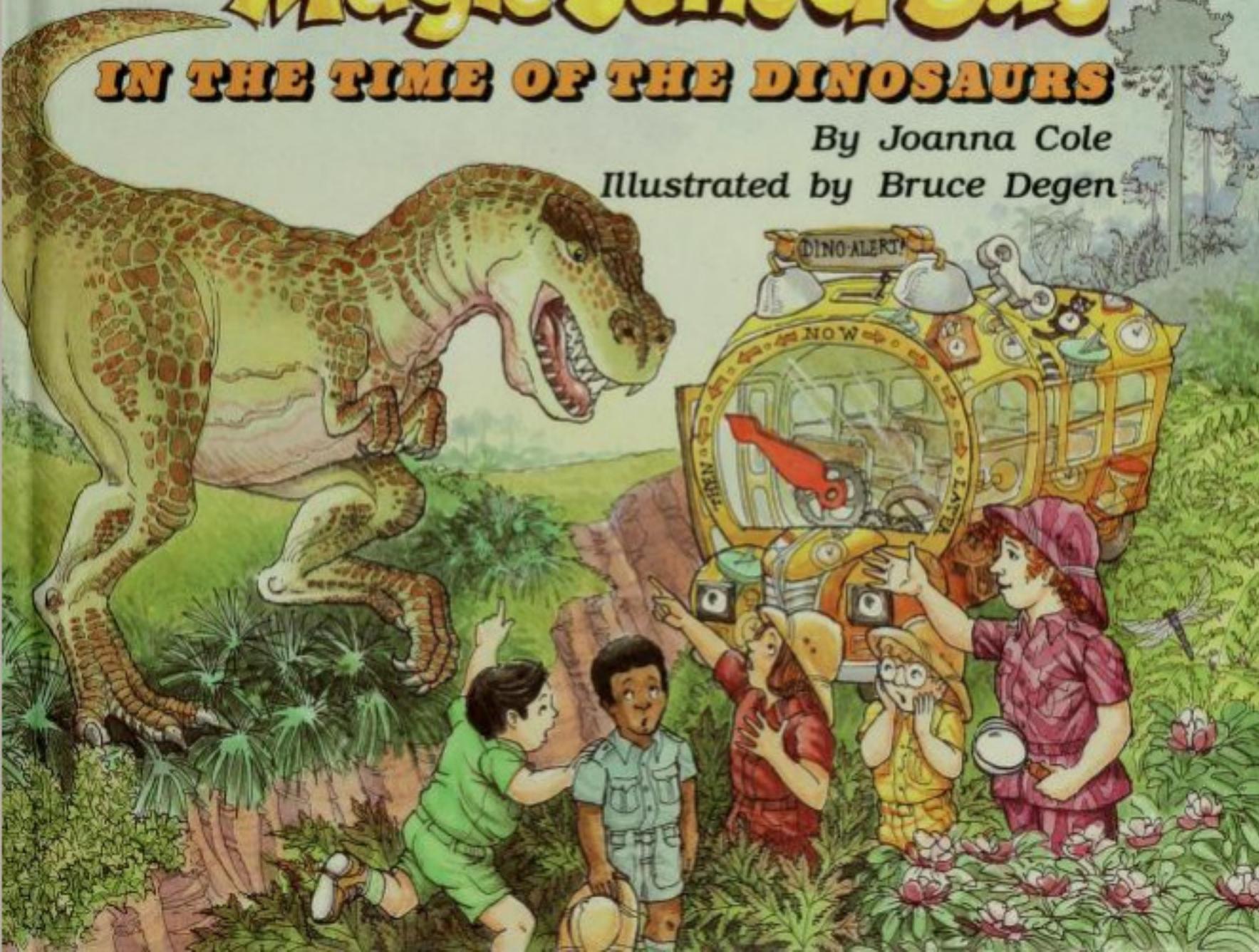


The Magic School Bus

IN THE TIME OF THE DINOSAURS

By Joanna Cole

Illustrated by Bruce Degen

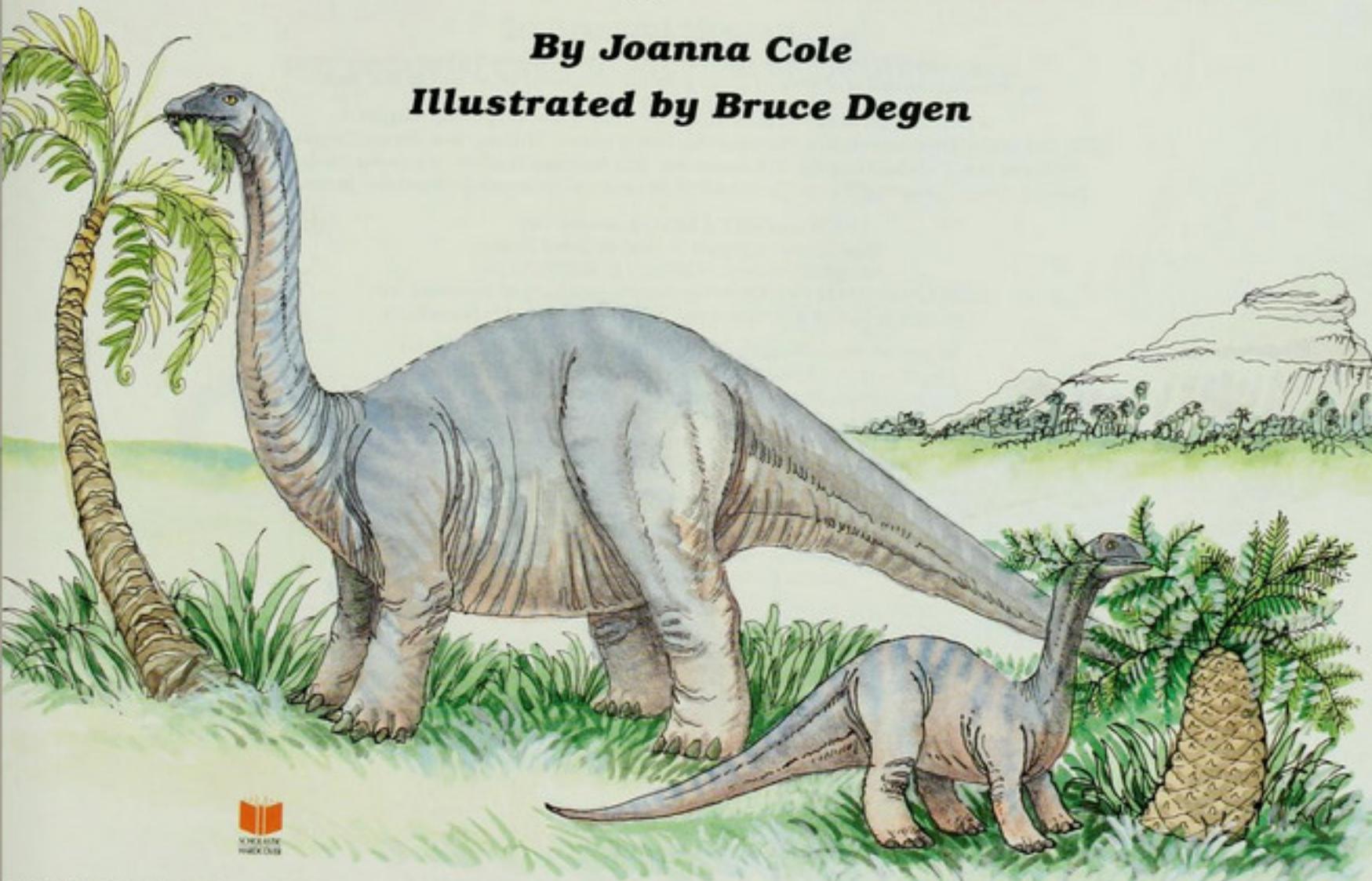




The Magic School Bus in the Time of the Dinosaurs

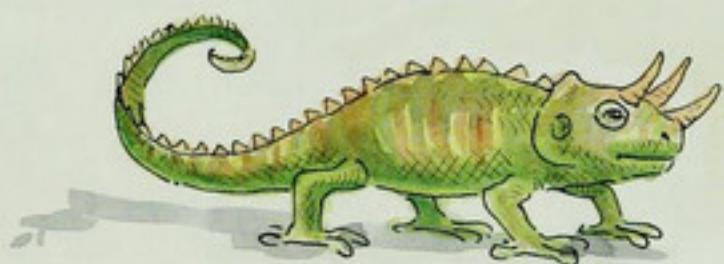
By Joanna Cole

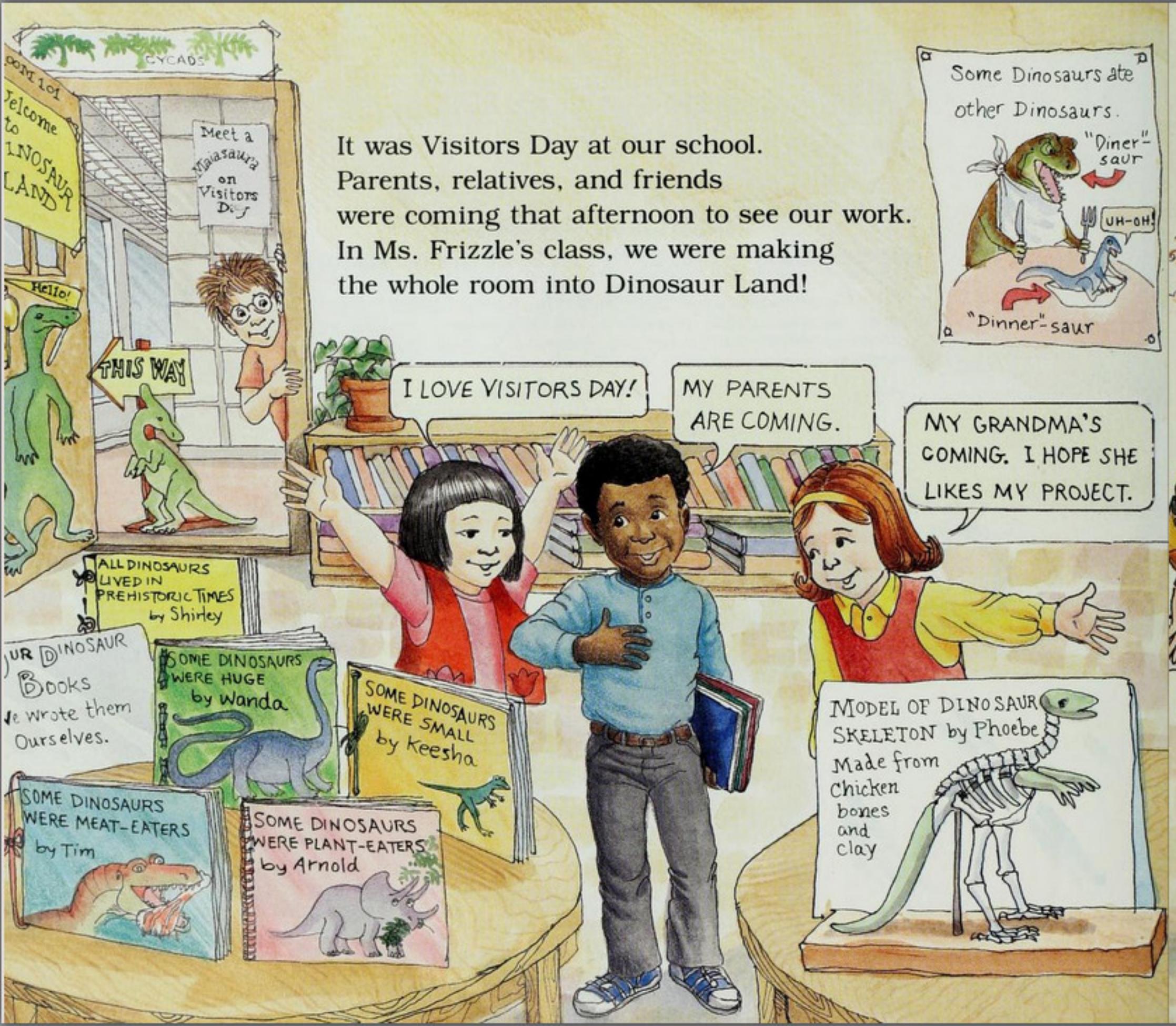
Illustrated by Bruce Degen



CHOLASTIC INC. / New York

To Armand Morgan,
our personal guide to the time of the dinosaurs
J.C. & B.D.

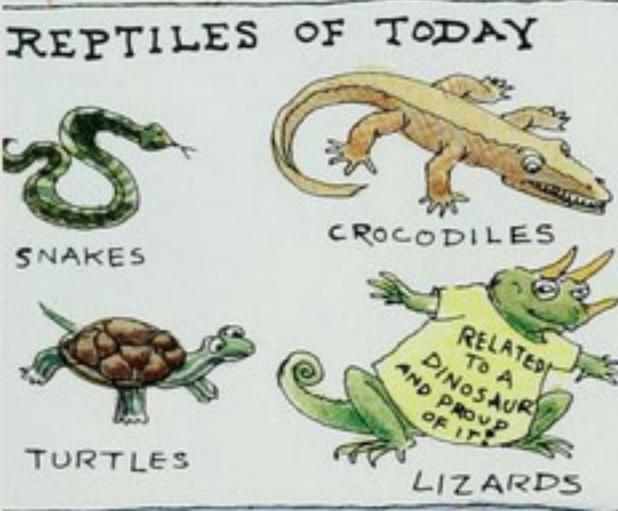




• DINOSAURS WERE REPTILES
by Carlos
Dinosaurs were a group of special prehistoric reptiles. Reptiles are animals that:

- have backbones
- have scaly skin
- lay eggs
- are cold-blooded

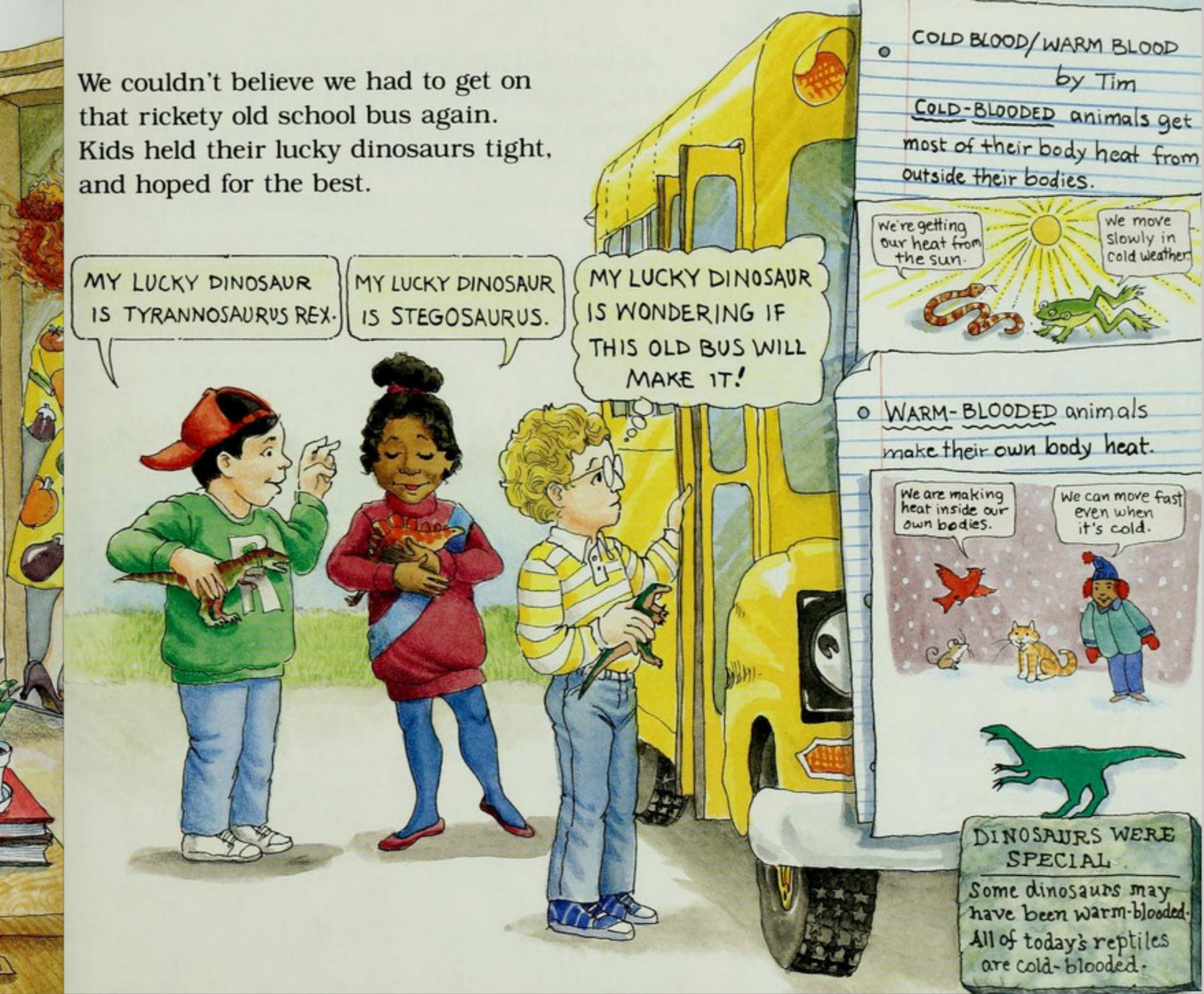
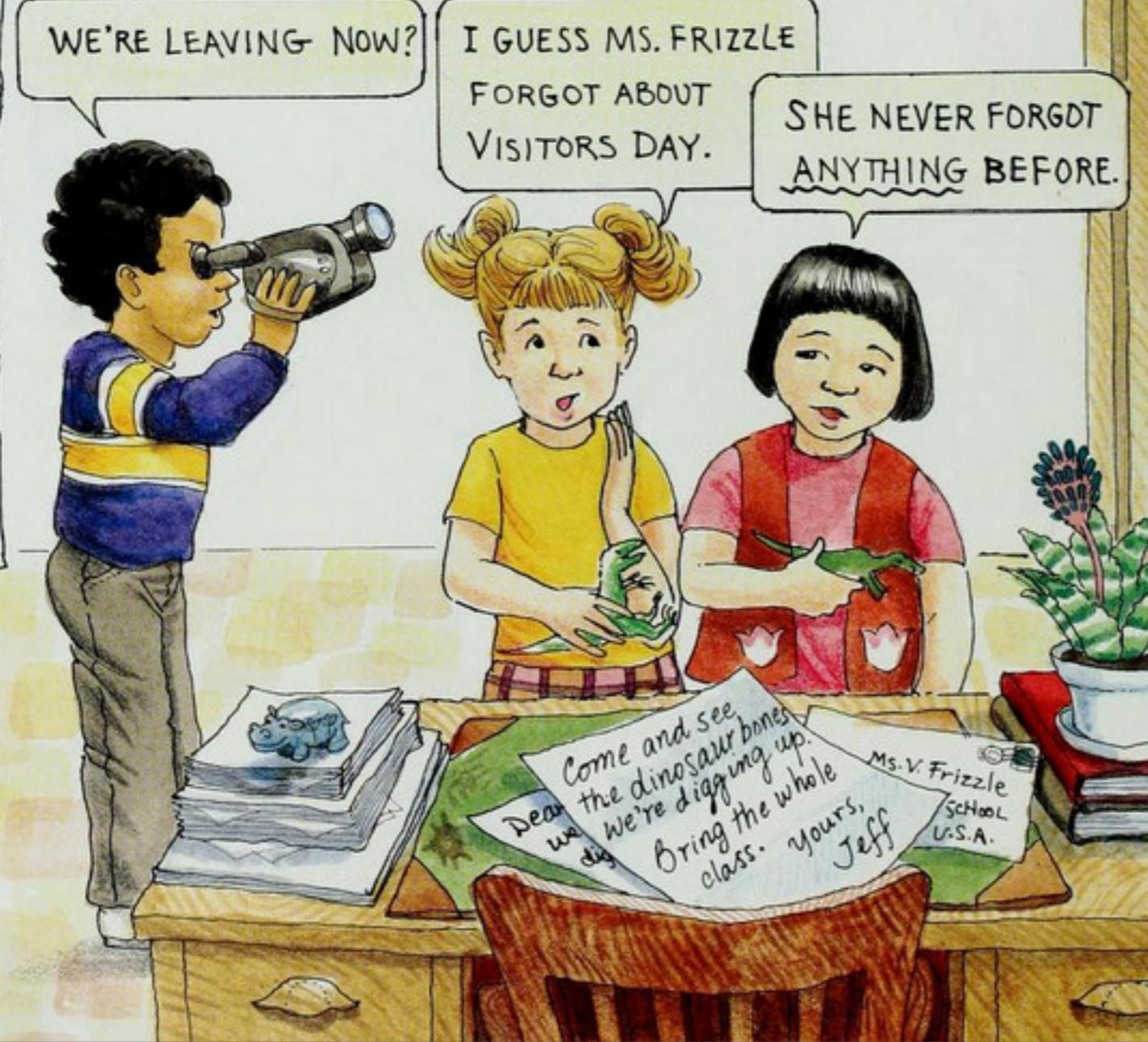
REPTILES OF TODAY



SNAKES
CROCODILES
TURTLES
LIZARDS

DINOSAURS WERE SPECIAL
Dinosaurs had straight legs. They could walk or run fast.
Today's reptiles have sprawled-out legs.

"Our class has been invited to a dinosaur dig," explained the Friz.
"We'll be leaving right away."
As we went out, one kid grabbed the video camera.
Others took along model dinosaurs for good luck.
When you have the wackiest teacher in school,
you need all the luck you can get!



NO PEOPLE EVER SAW
A DINOSAUR
by Florrie
When early humans
appeared on earth,
dinosaurs had already
been dead for millions
of years!

People found out about
dinosaurs from fossils.



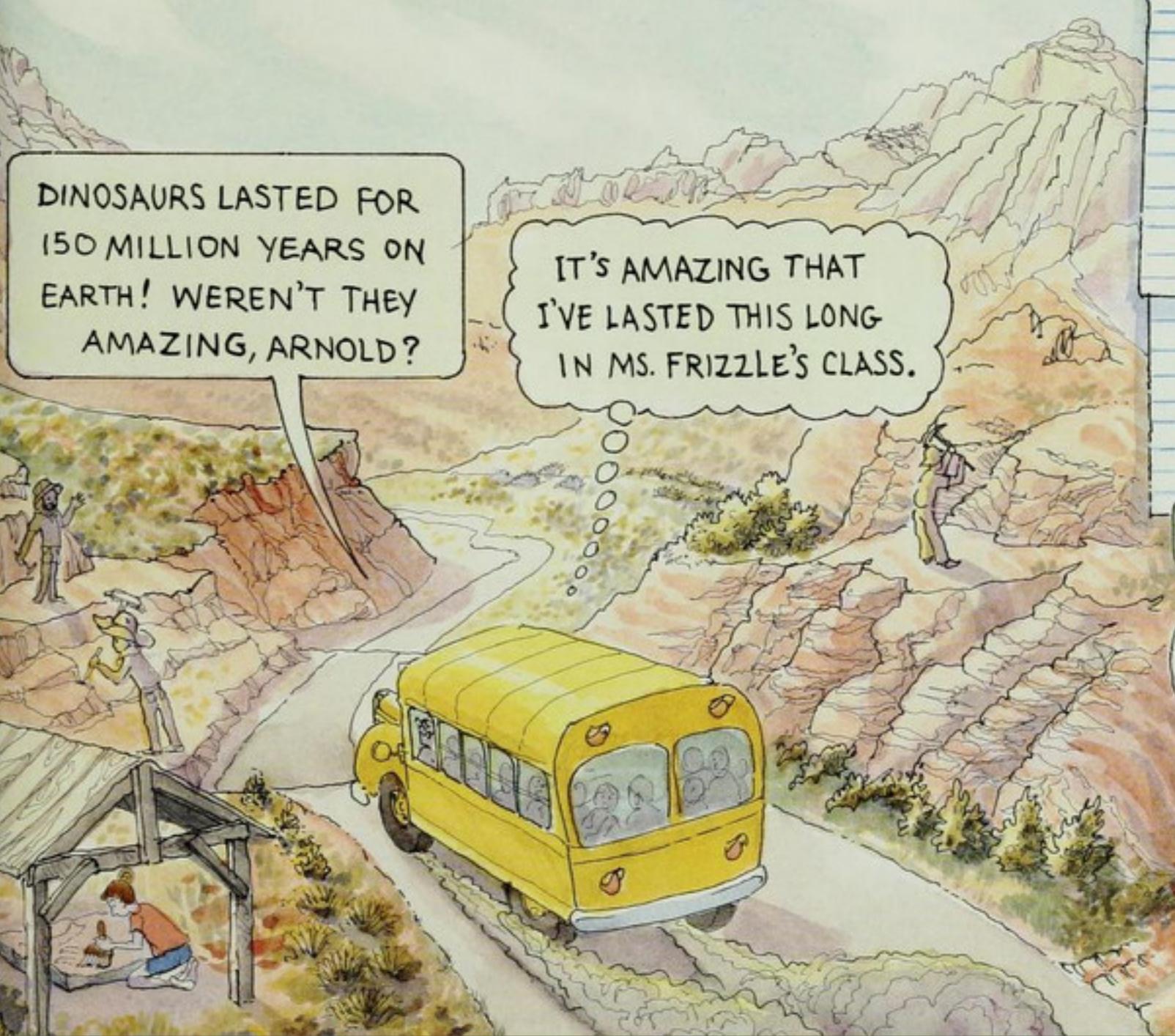
FIVE KINDS OF DINOSAUR
FOSSILS
by Alex

- 1. BONES
- 2. TEETH
- 3. FOOTPRINTS
- 4. SKIN PRINTS
- 5. EGGS AND NESTS



As we rolled onto the highway,
Ms. Frizzle shouted from the driver's seat,
"We're on our way to fossil country, kids!
Who knows what a fossil is?"
Luckily, we had done our homework.
We knew a fossil is anything left
from a prehistoric animal or plant.

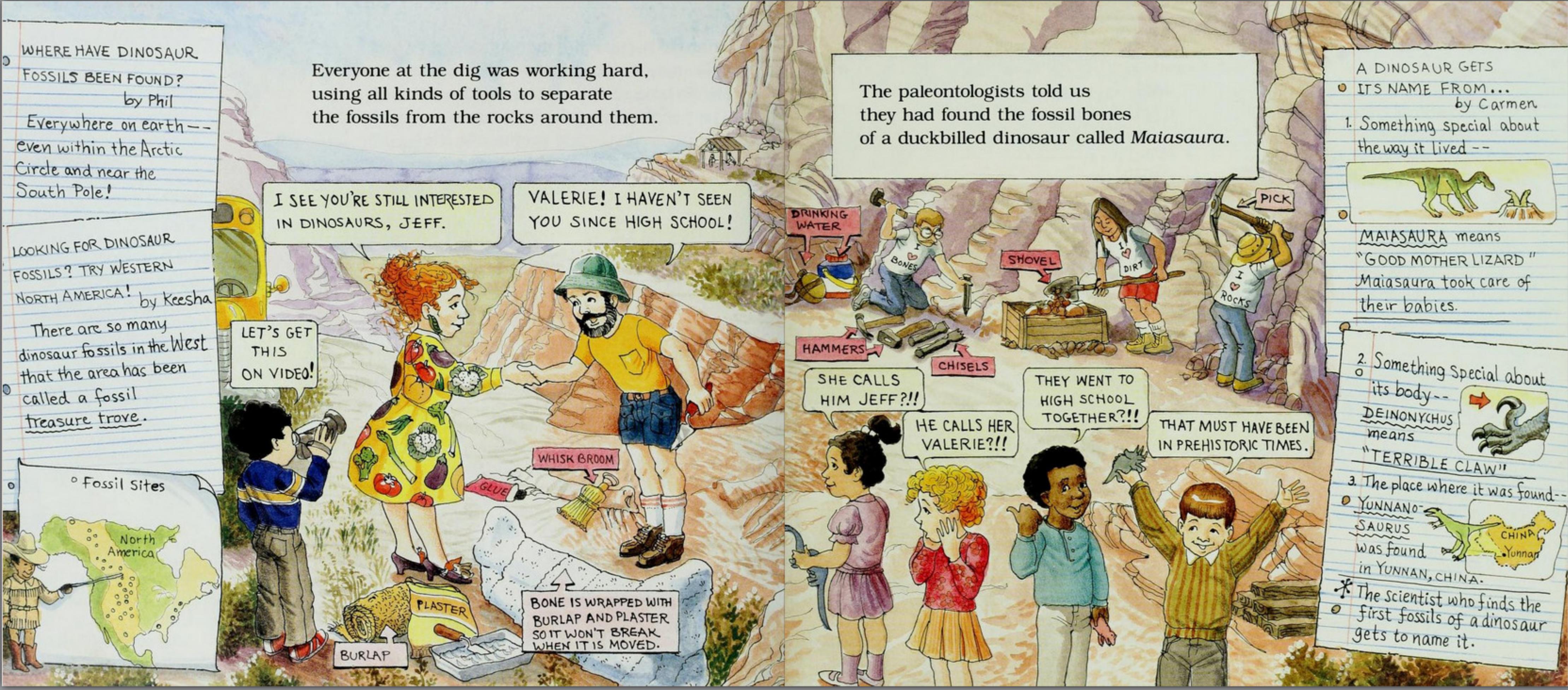
After we had been driving for a long time,
we came to a desert where people were working.
Ms. Frizzle said this was the dinosaur dig.
The people were paleontologists —
scientists who study prehistoric life.



- HOW A DEAD DINOSAUR
COULD BECOME A FOSSIL
by Carrie
- 1. The dead body
sank in a river,
and rotted away.
- 2. The bones were
covered with
sand.
- 3. In time, the
o sand turned
into rocks.
- 4. The bones
became hard
as rock, too.



DINOSAURS WERE SPECIAL
Dinosaurs were on earth
1500 times longer than
humans have been so far.



HOW CAN WE TELL WHICH BONES
ARE WHICH? by Shirley

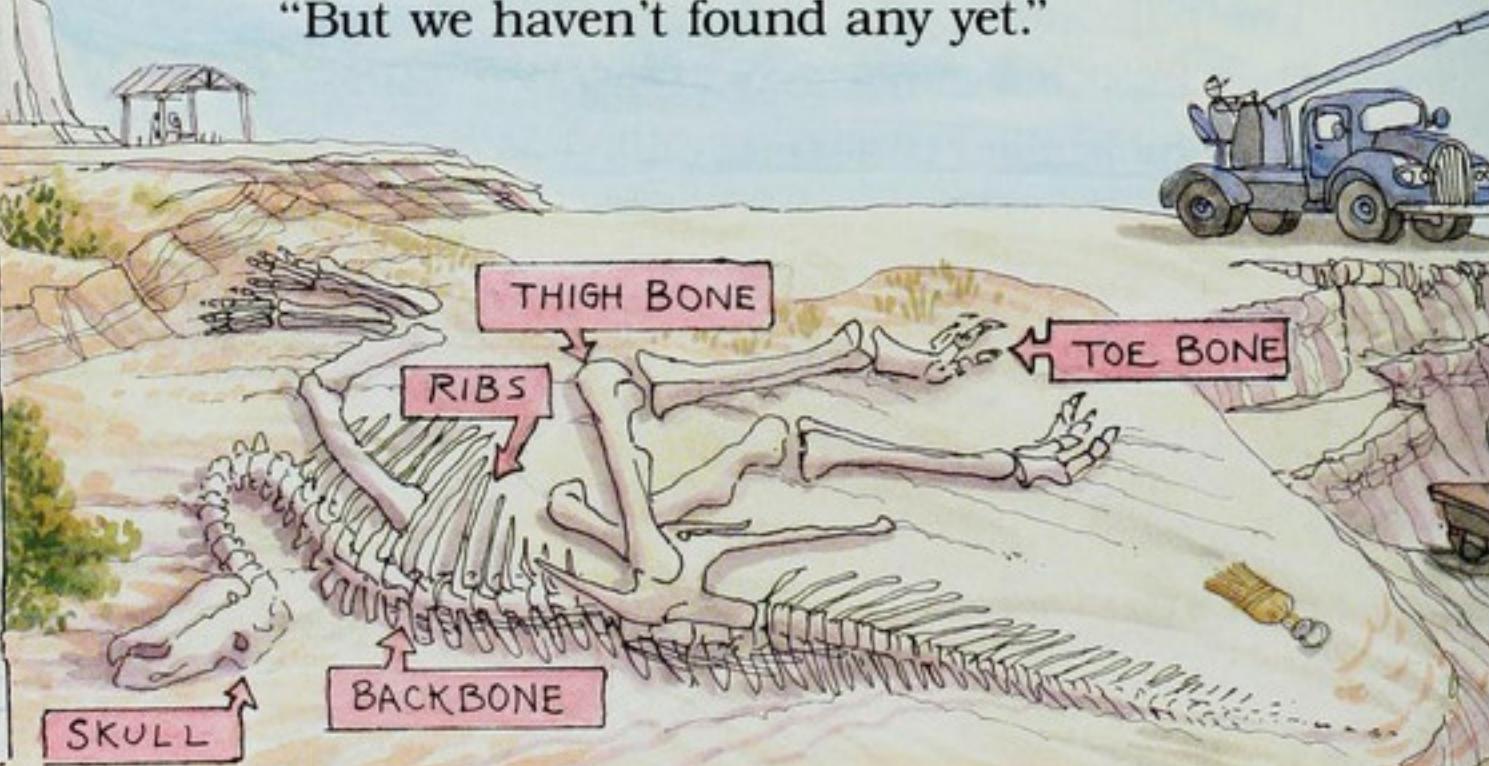
Paleontologists compare
dinosaur bones with the
bones of other animals.

For example, if you know the
thigh bone of a...



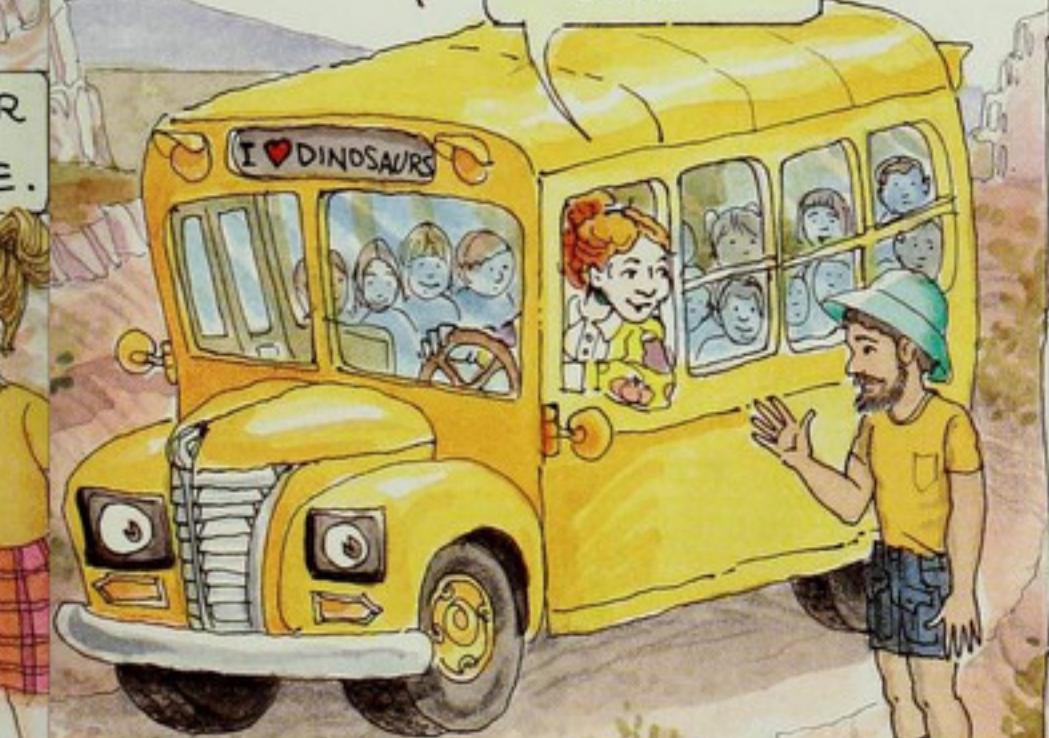
HUMAN
...you will be able to tell
the thigh bone of
a dinosaur.

MAIASAURA



We saw a gleam in Ms. Frizzle's eye.
"Want to look for some *Maiasaura* nests,
kids?" she shouted.
She rushed us onto the bus
and drove off.

BUT WE JUST GOT HERE.
I WANT TO LOOK AT THAT CRANE.
I WANT TO SEE THE DINOSAUR BONE.
SEE YOU LATER, JEFF.



We hadn't gone far when Ms. Frizzle stopped the bus.
She turned a dial on the dashboard,
and the bus began to change.
It looked like a giant alarm clock.
Ms. Frizzle said it was a time machine!



HOW DO WE FIGURE OUT

- WHAT DINOSAURS LOOKED LIKE?
by Ralphie
- Scientists put dinosaur bones together.
 - 1. They figure out how the muscles were attached from marks on bones.
 - 2. They know what the skin was like from fossil skin prints
 - 3. They guess dinosaur colors by looking at today's animals.

The hand on the clock started moving backward:

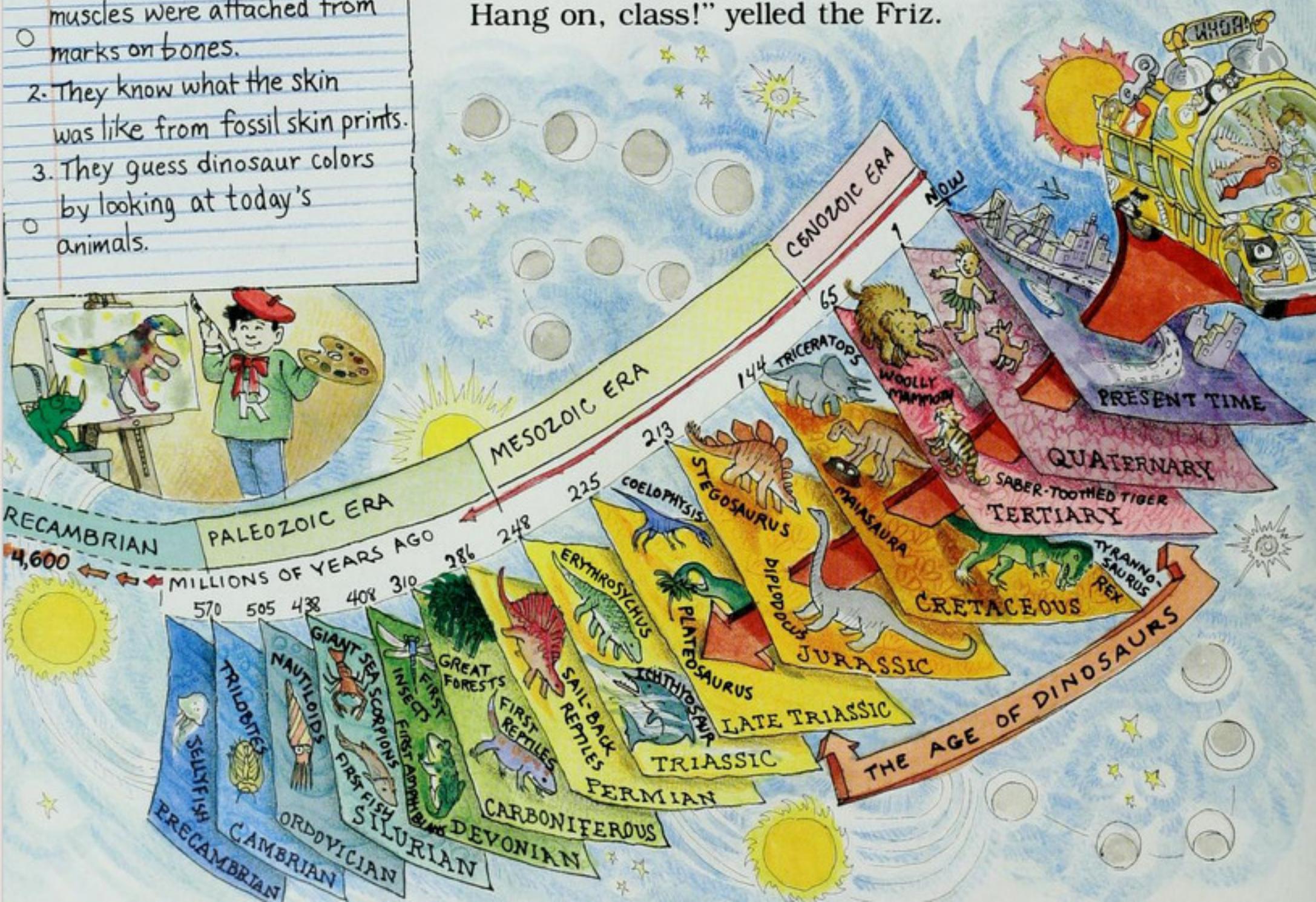
One hour back . . . one day back . . . one year back . . .

Outside the windows, the desert was whizzing by.

One thousand years . . . one million years . . .

"We're on our way to the time of the *Maiasaura*.

"Hang on, class!" yelled the Friz.



Ring! Ring! The alarm went off.

We heard Ms. Frizzle say, "Ooops!"

We had a little machine trouble.

We went back too far in time.

“I will back too far in time,
but it’s nothing to worry about.”

Nothing to worry about!

Nothing to worry about!
We missed the time of the *Maiasaura*
by millions of years!



WHAT WAS THE EARTH LIKE THEN?



One giant continent
called PANGAEA

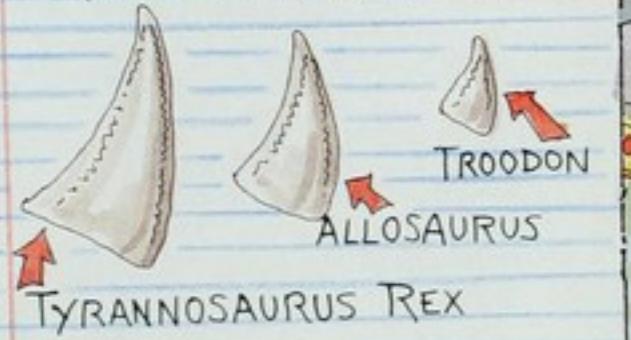
- Rainy Jungles
- Many deserts
- Warm temperatures
- No winter anywhere!



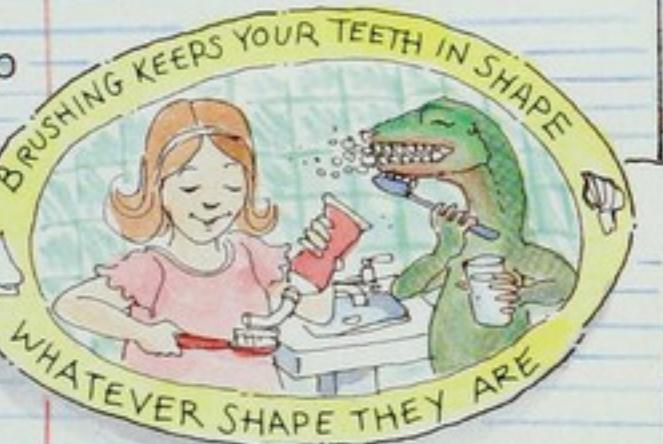
FOSSIL TEETH TELL WHAT
O DINOSAURS ATE

by Phoebe

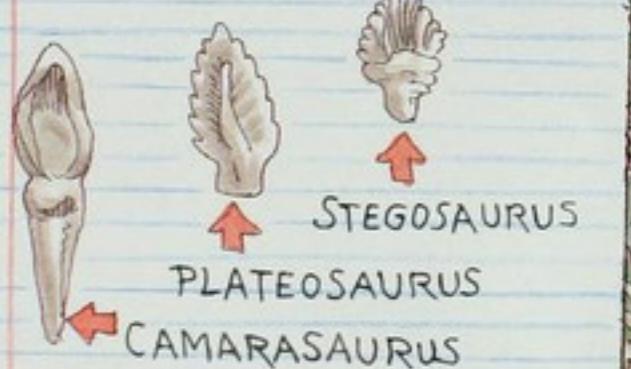
Sharp, pointy teeth
came from meat-eaters.



- O TROODON
- O ALLOSAURUS
- O TYRANNOSAURUS REX



Odd-shaped teeth
came from plant-eaters.



- O STEGOSAURUS
- O PLATEOSAURUS
- O CAMARASAURUS

The Friz pointed to some dinosaurs
that were hunting on the banks of a river.
"Their name is *Coelophysis*," she said.
"These early dinosaurs were small and light.
The giant dinosaurs did not develop until later."

COELOPHYSIS HAVE EXCELLENT
TEETH FOR EATING MEAT.
THEIR TEETH HAVE "SAW"
EDGES LIKE STEAK KNIVES.

TRY NOT TO LOOK
LIKE A STEAK!



Suddenly, a large reptile rose out of the water
and opened its huge mouth.

"That is not a dinosaur," Ms. Frizzle said.
"It's a phytosaur — a crocodile-like reptile."
The phytosaur caught a little dinosaur
and pulled it underwater.

We wanted to get back on the bus, pronto!
But Ms. Frizzle said we had to learn
about Triassic plant life.

ARE MEAT-EATERS MEAN?
O by Arnold
No. Predators are part
of nature. Hunting is
the only way they can
get their food.
O



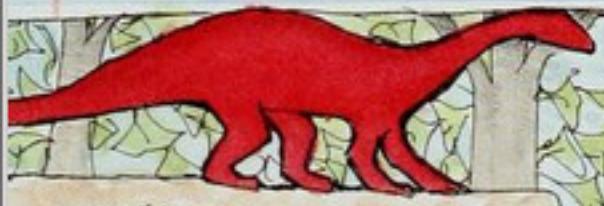
SOME WORDS FROM
DOROTHY ANN
A predator is a
hunting animal.
Prey are the animals
a predator hunts.



TRIASSIC PLANTS

by John

In Triassic times
you would see:



Many dinosaurs were
plant-eaters. Only a few
kinds of modern
reptiles are.

Plateosaur Tooth

GINGKOS

We were examining some ferns
when Ms. Frizzle shouted,
"Look at those terrific prosauropods!
They were the first dinosaurs to eat plants!"

I JUST LOVE
TRIASSIC PLANTS,
CLASS--DON'T YOU?

DO YOU HEAR
SOMETHING?

YOU MEAN THOSE
CRUNCHING
SOUNDS?

MS. FRIZZLE
ISN'T THE ONLY
ONE WHO LOVES
TRIASSIC PLANTS.



A sudden downpour caught us by surprise
But the dinosaurs went right on eating.
We ran for the bus, and Frizzie called,
"Get ready to go forward in time, kids!"

IN A TROPICAL FOREST,
RAINS ARE FREQUENT
AND HEAVY, ARNOLD.

NOW SHE
TELLS ME!

JEFF WILL
LOVE THIS
VIDEO.



THE FIRST MAMMALS
LIVED WITH DINOSAURS

by Rachel

The first true mammals
lived in the Late Triassic.
They were furry rat-like
animals.



WHAT ARE MAMMALS?

by Wanda

Mammals are animals that:

- have backbones
- have hair or fur
- are warm-blooded



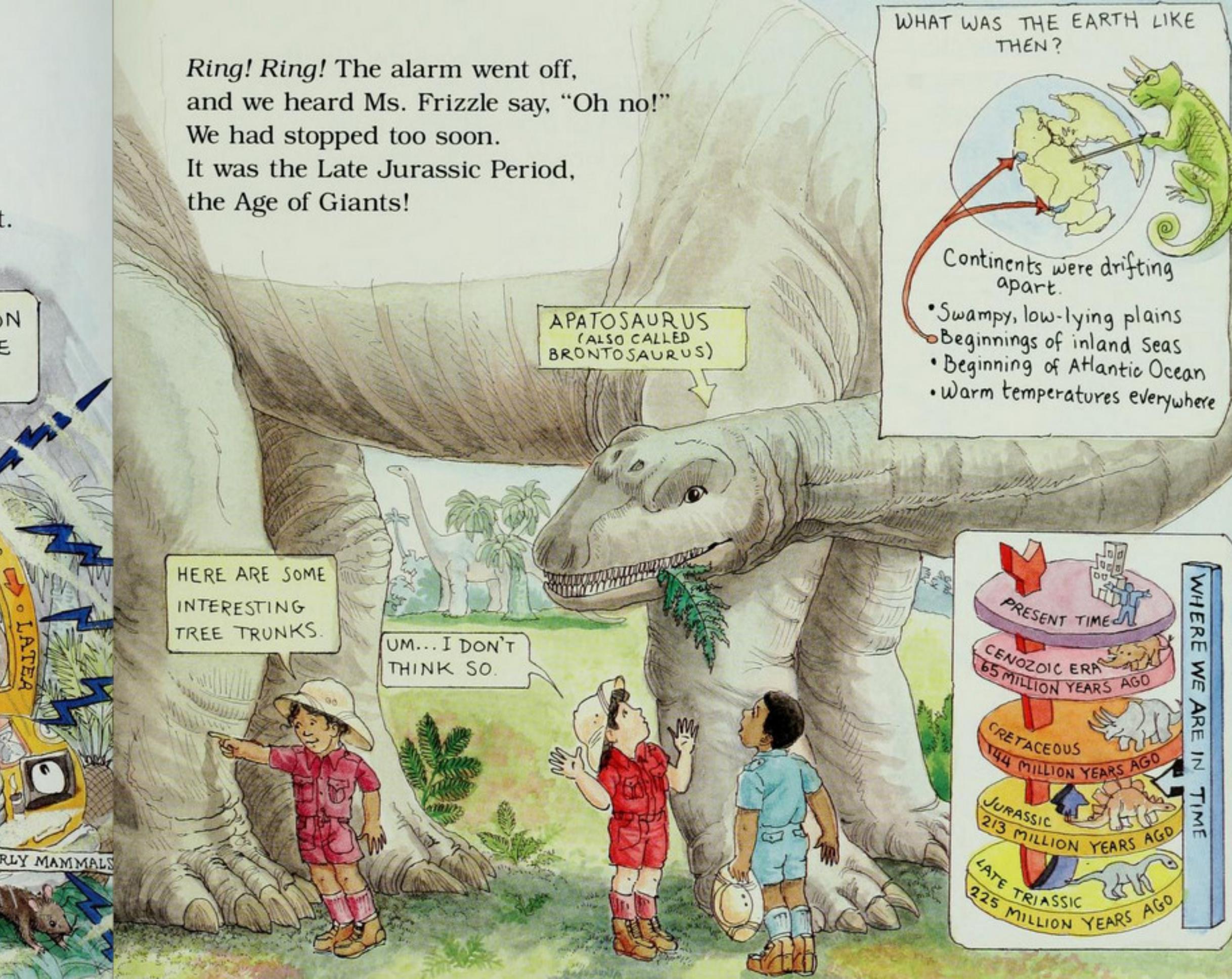
- feed their babies with
mothers' milk

The last things we saw before we took off
were some small, furry animals.

Ms. Frizzle said they were the first mammals.
The hand on the clock moved ahead,
and the Triassic rain forest whizzed out of sight.



Ring! Ring! The alarm went off,
and we heard Ms. Frizzle say, "Oh no!"
We had stopped too soon.
It was the Late Jurassic Period,
the Age of Giants!

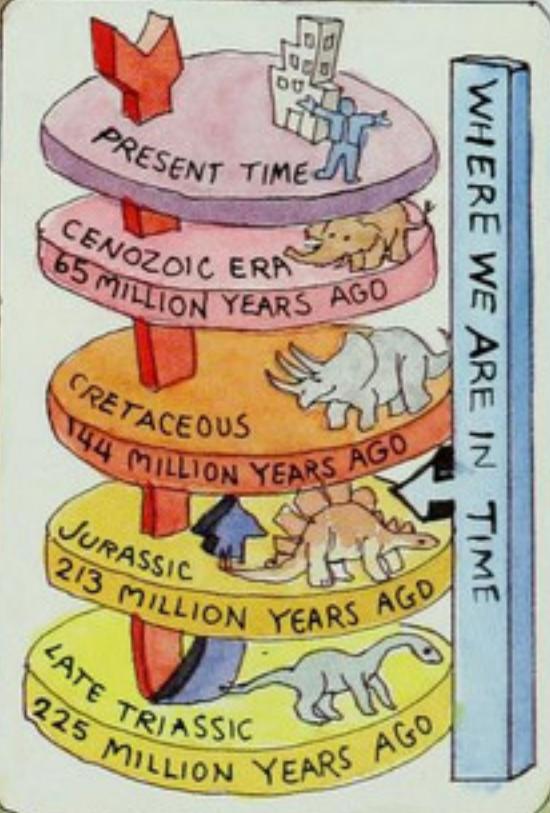


WHAT WAS THE EARTH LIKE
THEN?



Continents were drifting apart.

- Swampy, low-lying plains
- Beginnings of inland seas
- Beginning of Atlantic Ocean
- Warm temperatures everywhere



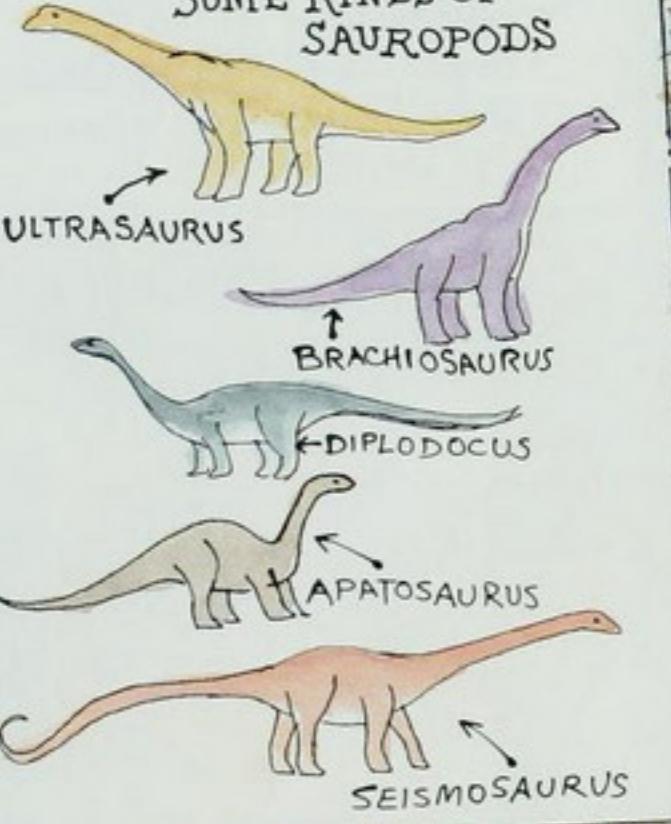
WHAT WERE SAUROPODS?

by Amanda Jane

Sauropods were heavy, long-necked dinosaurs.

They walked on four legs
and ate plants.

SOME KINDS OF SAUROPODS



MILLION YEARS
PASSED SINCE
THEY WERE HERE LAST.

K! THOSE
OPODS ARE
LOWING THEIR
OD WHOLE!

THEIR TEETH ARE
NOT GOOD FOR
EATING, PHOEBE.

HEY SWALLOW
ONES TO GRIND UP
OD IN THEIR
STOMACHS.

IT MUST TAKE A
LOT OF PLANTS
TO FEED A
GIANT SAUROPOD.

ROPODS MUST
ND MOST OF
R TIME EATING.

AT A LIFE!

DINOSAURS WERE SPECIAL
Some dinosaurs may have
travelled in herds!
None of today's reptiles do.

"Notice these sauropod dinosaurs, children," said Ms. Frizzle. "They were kind of impossible to miss. They were the largest land animals that ever lived!"

IT MUST TAKE A LOT OF PLANTS TO FEED A GIANT SAUROPOD.

SAUROPODS MUST SPEND MOST OF THEIR TIME EATING.

WHAT A LIFE!

DINOSAURS WERE SPECIAL
Some dinosaurs may have traveled in herds!
None of today's reptiles do.

NO SWAMPS FOR SAUROPODS
by Ralphie
People used to think sauropods waded in swamps. But fossil footprints show
they walked on land and may have traveled in herds.

THE FOOTPRINTS WERE MADE AT THE SAME TIME... AND THEY ARE ALL GOING IN THE SAME DIRECTION.

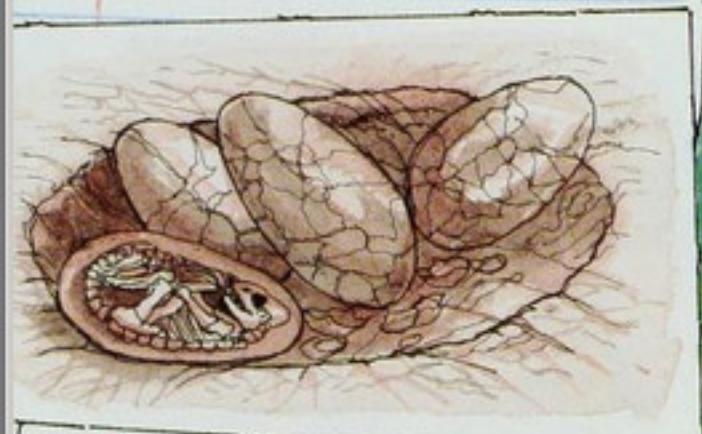
FOSSIL TRACKWAY
OVERHEAD VIEW OF A DINOSAUR HERD
A DINOSAUR HEARD WHAT?

WE KNOW DINOSAURS

○ LAID EGGS

by Amanda Jane

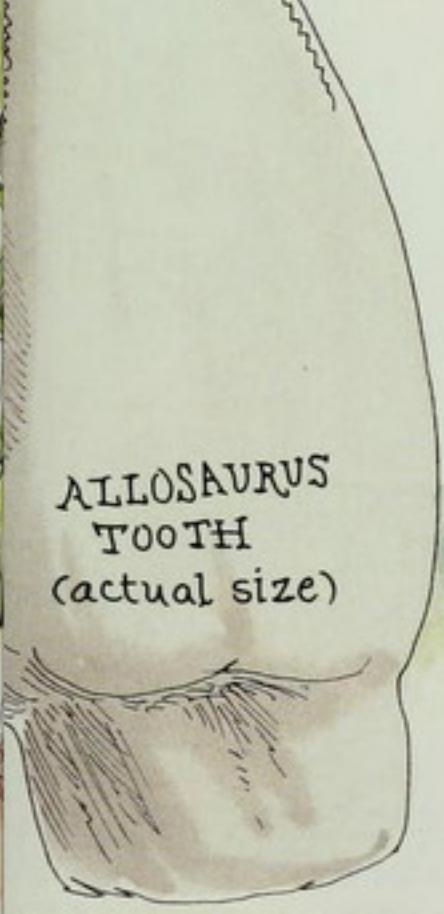
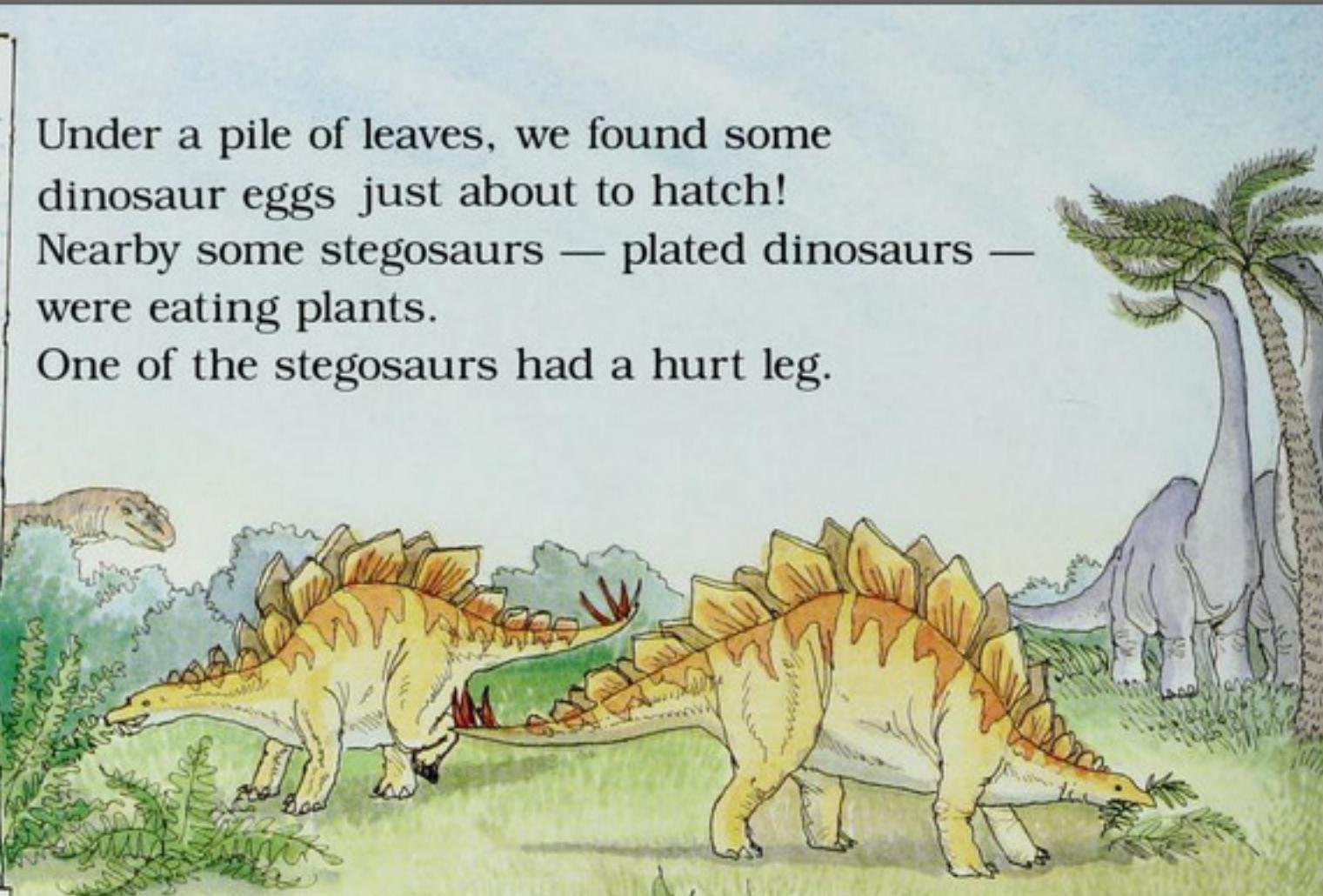
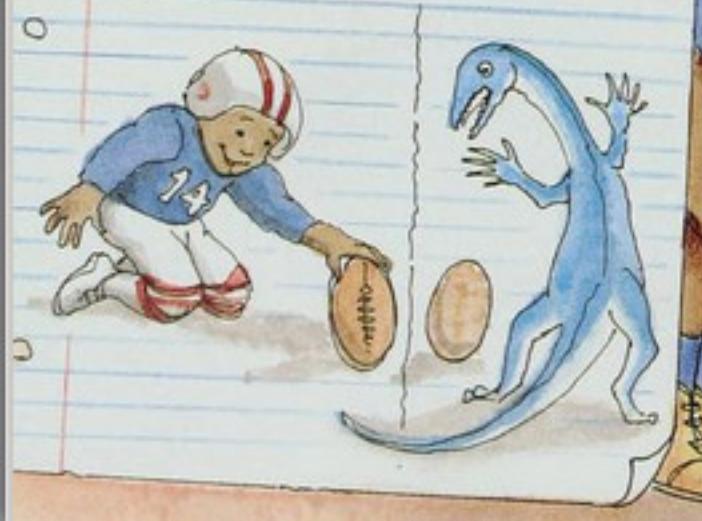
Fossil dinosaur eggs have been found. Inside some, there are tiny skeletons of babies.



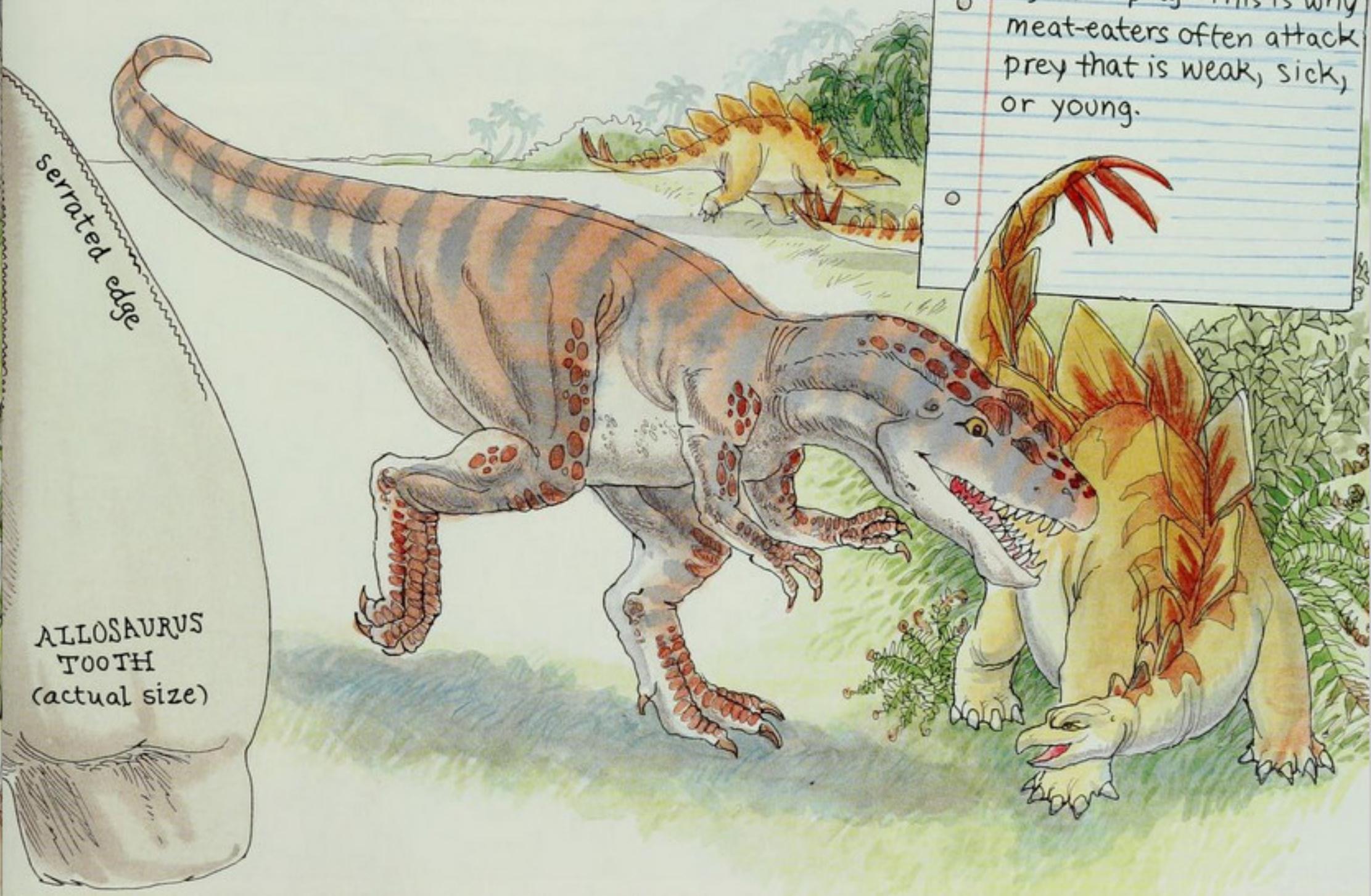
○ HOW BIG WERE DINOSAUR EGGS?

by Molly

The largest dinosaur egg we have found was about the size of a football!



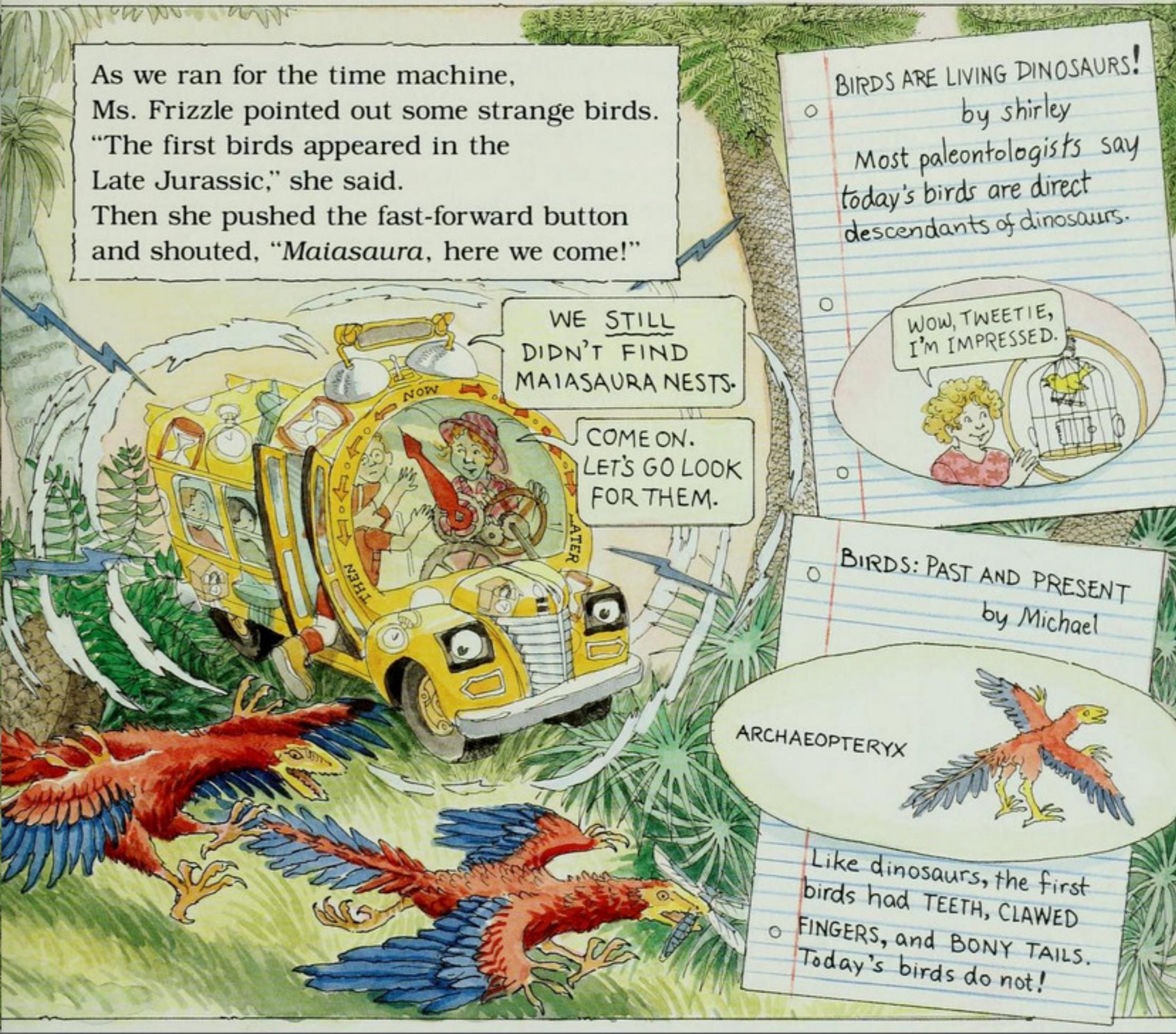
Suddenly an *Allosaurus* approached the wounded *Stegosaurus*. *Stegosaurus*'s spiked tail lashed out. It missed *Allosaurus* by an inch! What would happen next? We held our breath.

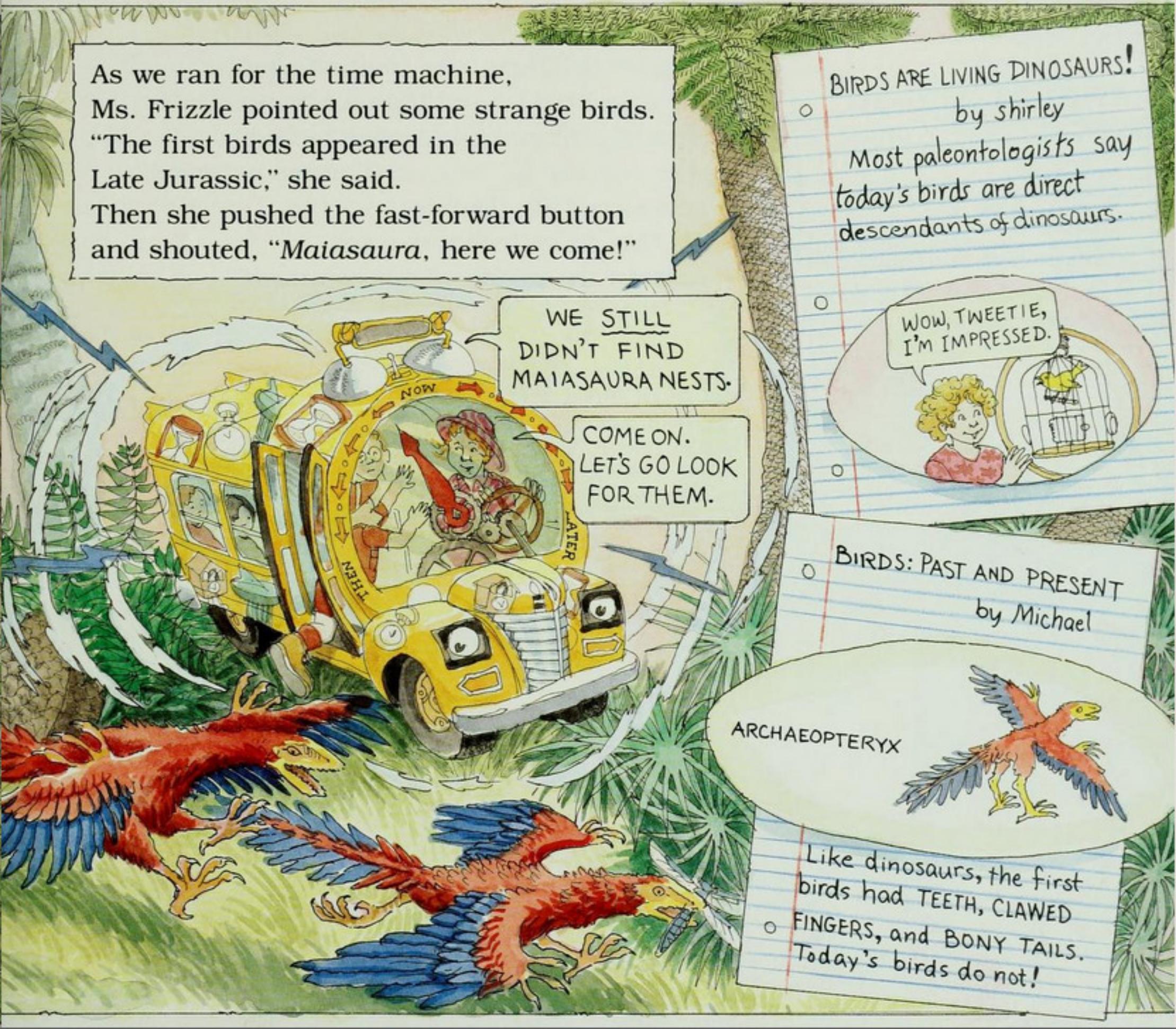


○ IT'S HARD TO BE A HUNTER

by Alex

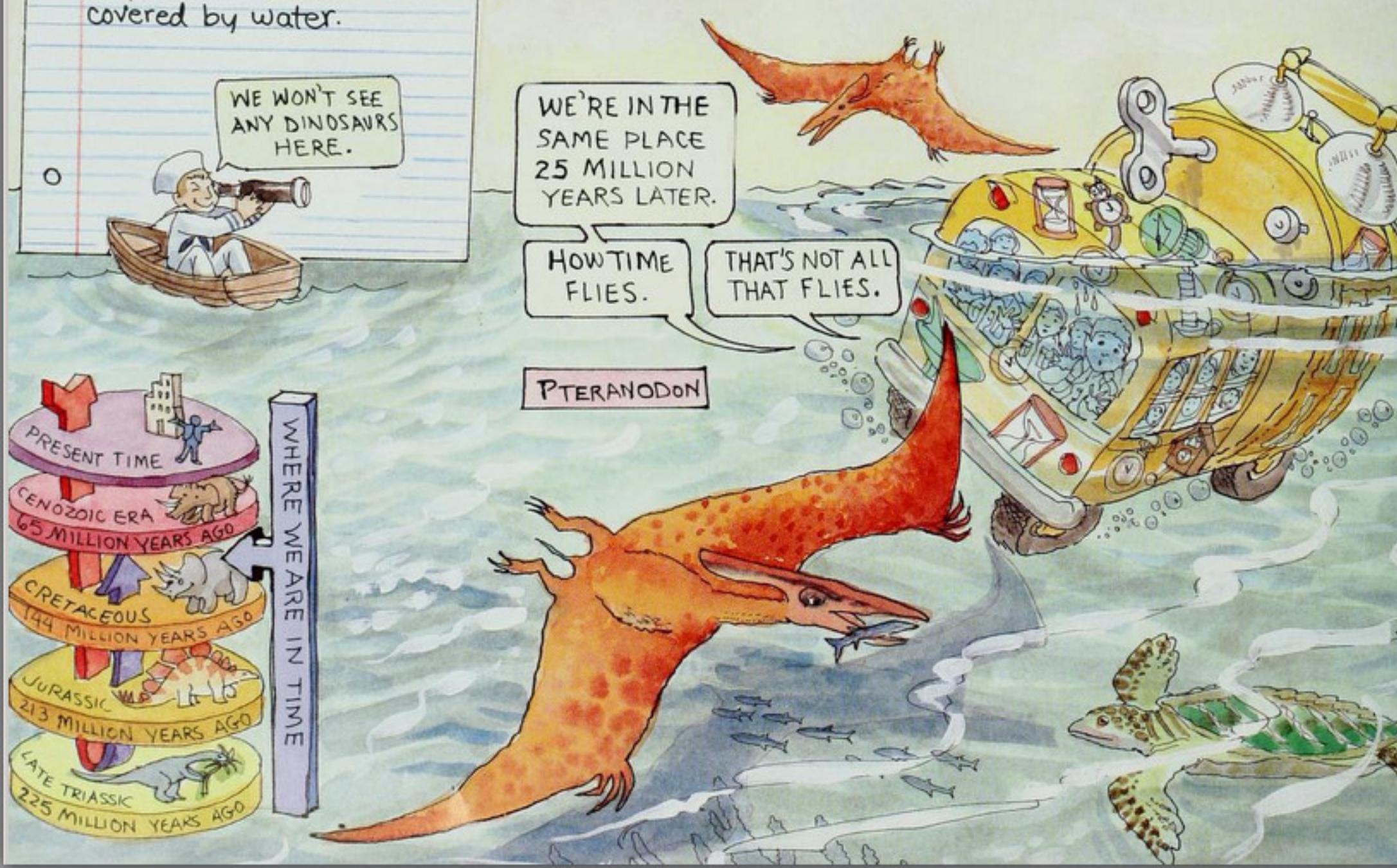
Being a predator is dangerous. Predators can get hurt or killed by their prey. This is why meat-eaters often attack prey that is weak, sick, or young.



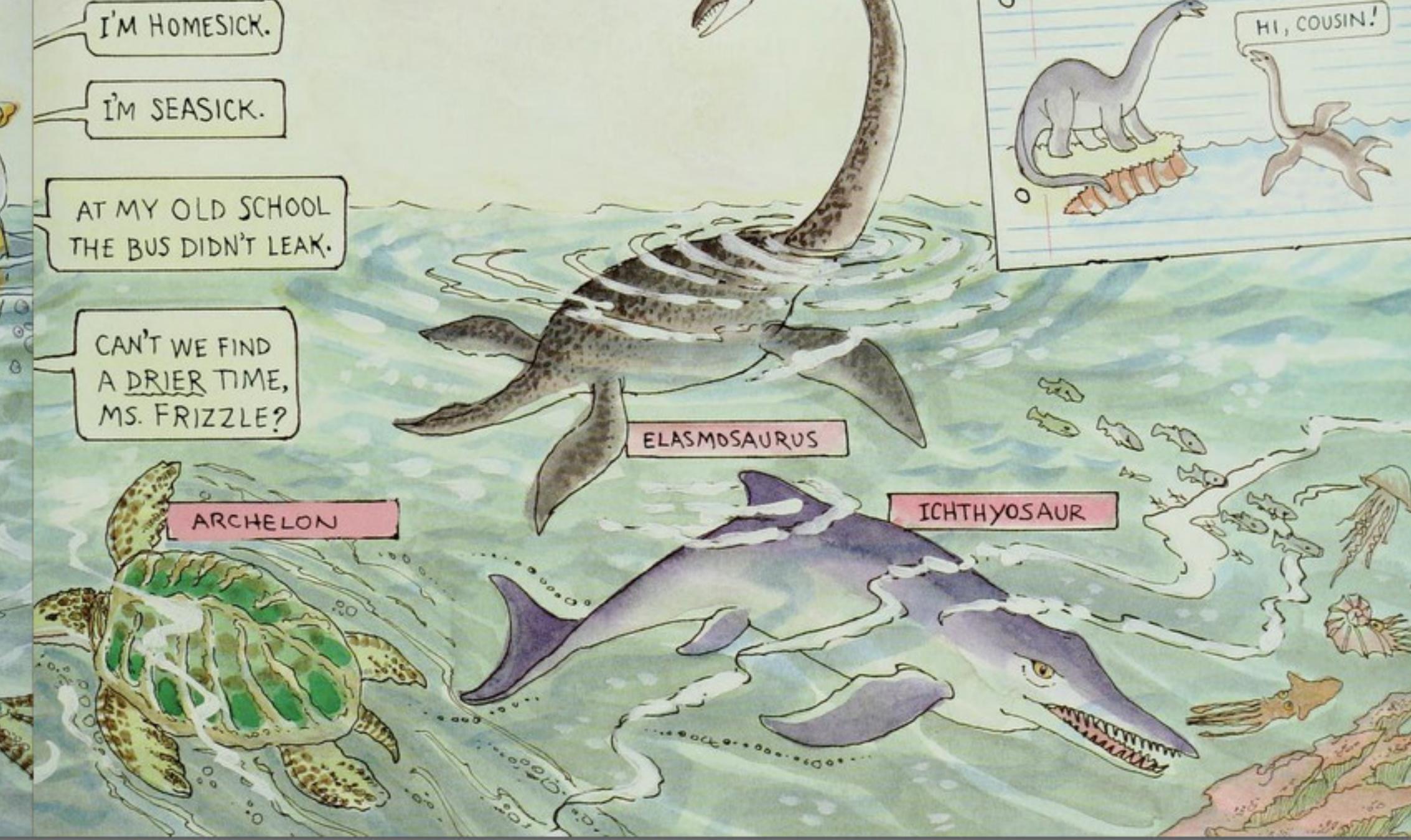


- o ALL DINOSAURS WERE LAND ANIMALS
 - by Gregory
- No dinosaurs lived in the sea. During the Cretaceous, dinosaurs lived in places that were not covered by water.
- o in places that were not covered by water.

Ring! Ring! The alarm went off again. We looked out — and then we freaked out! Once again, we had stopped too soon. "Here we are in the Late Cretaceous Period," announced Ms. Frizzle. "At this time there was a sea right in the middle of our continent."



Out the windows, enormous sea reptiles swam by. Overhead, flying reptiles glided past, dipping their beaks in the water to catch fish. We were getting a little wet, so the Friz set the clock ahead again.



- o SEA REPTILES AND FLYING REPTILES: WERE THEY DINOSAURS?
 - by Tim
- No, they were relatives of dinosaurs.

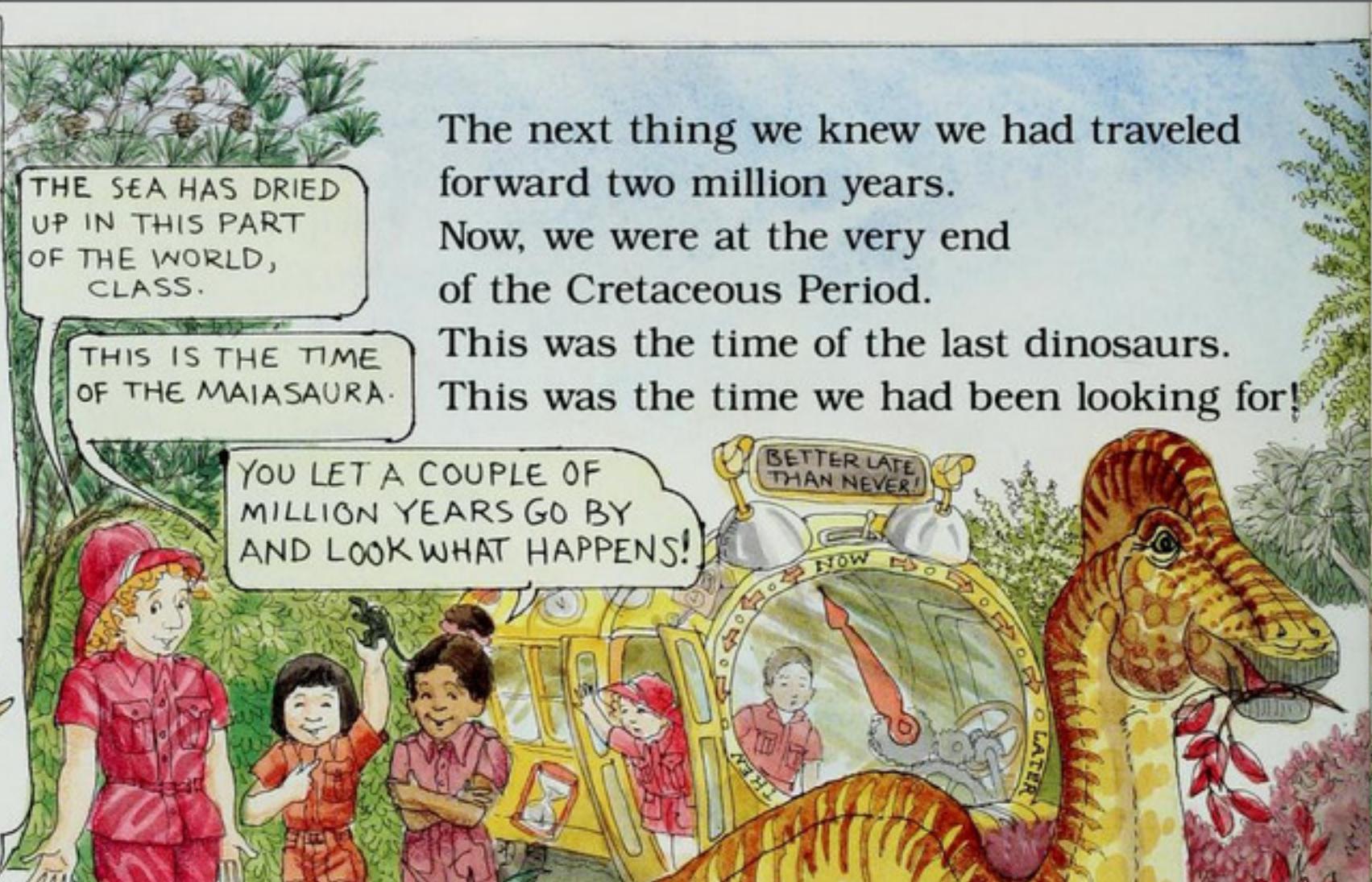


WHAT WAS THE EARTH
LIKE THEN?



Continents had drifted
farther apart than before.

- Temperatures were cooler
- There were seasons and polar ice caps



The next thing we knew we had traveled forward two million years.

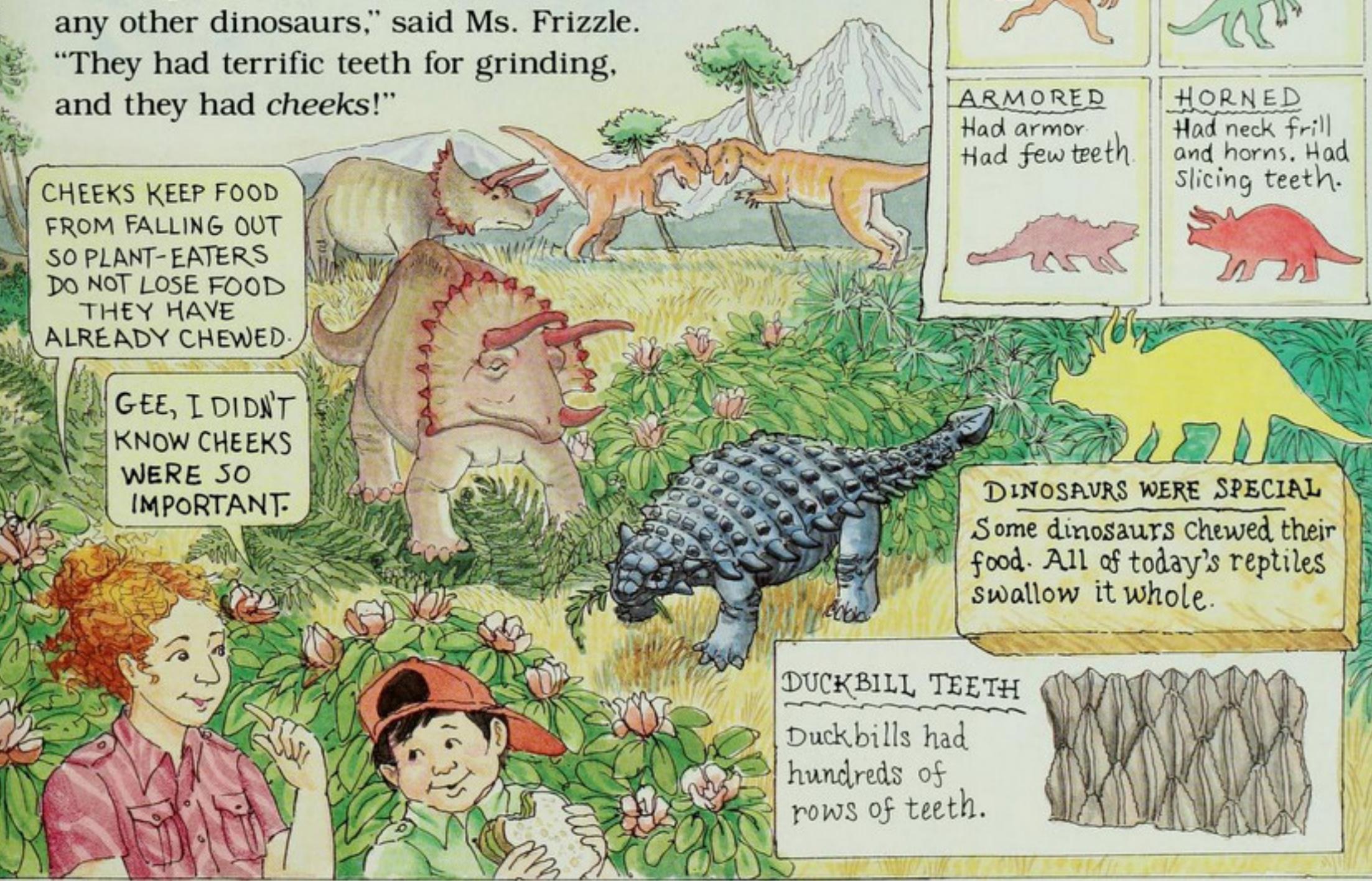
Now, we were at the very end of the Cretaceous Period.

This was the time of the last dinosaurs. This was the time we had been looking for!

As soon as we got off the bus, we saw that the Cretaceous world was different. The weather was cooler.

There were colorful flowers and fruits everywhere. And there were lots of new plant-eating dinosaurs.

"These plant-eaters could chew better than any other dinosaurs," said Ms. Frizzle. "They had terrific teeth for grinding, and they had *cheeks*!"



NEW PLANT-EATERS OF THE CRETACEOUS PERIOD
by Ms. Frizzle

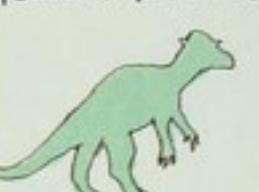
DUCKBILLS

Had hundreds of teeth in horny beaks.



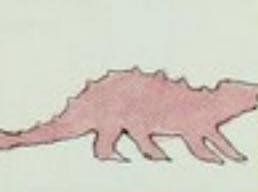
DOME HEADS

Had thick skulls. May have butted heads like rams.



ARMORED

Had armor. Had few teeth.



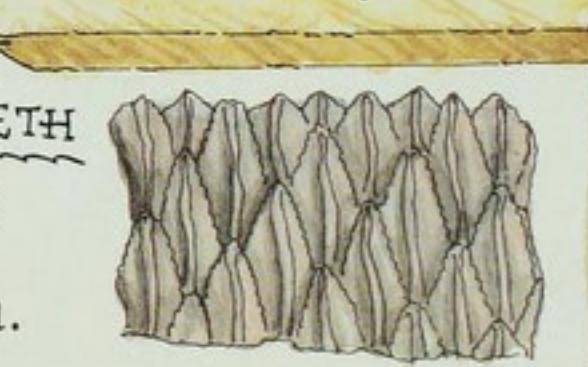
HORNED

Had neck frill and horns. Had slicing teeth.

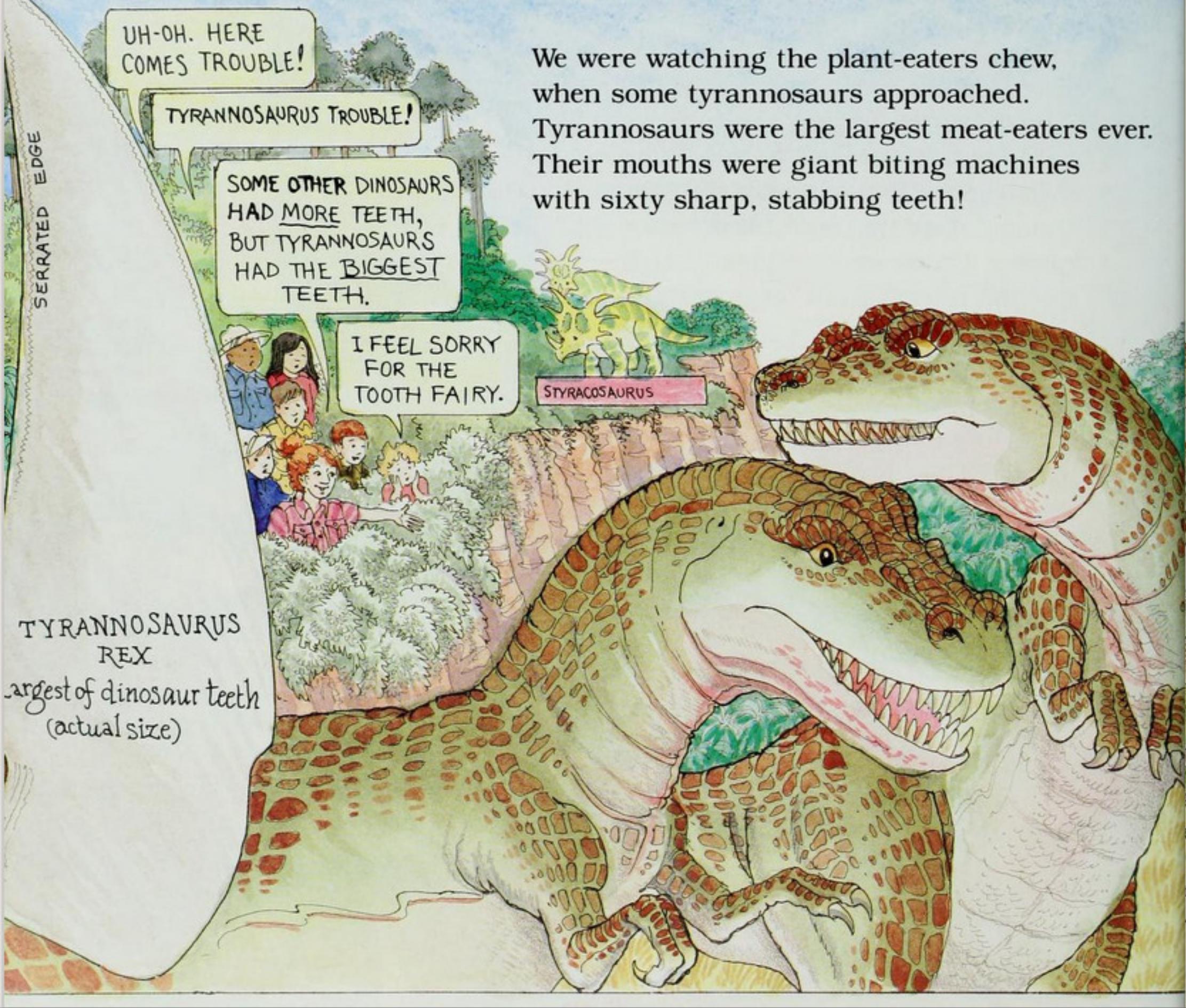


DINOSAURS WERE SPECIAL

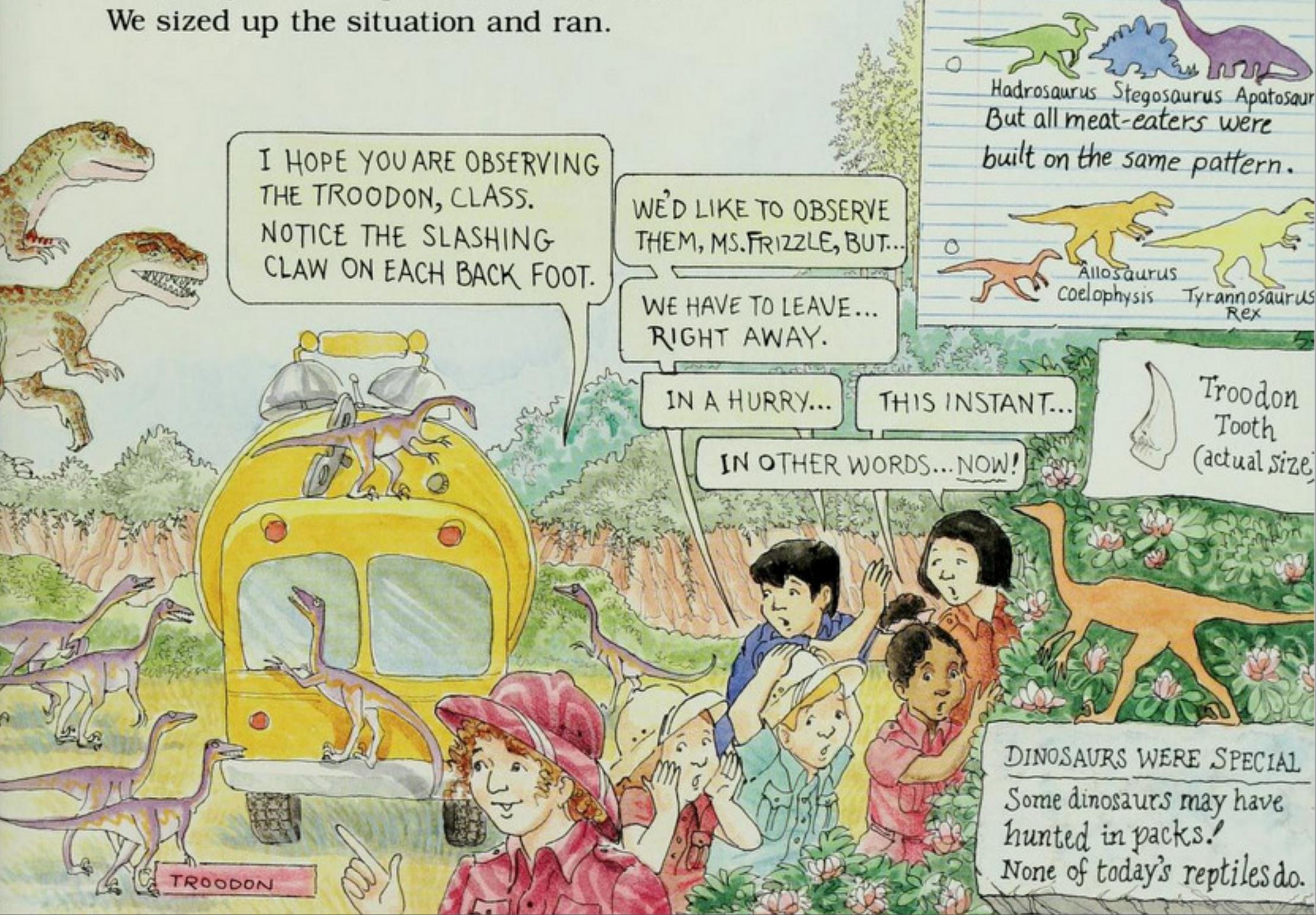
Some dinosaurs chewed their food. All of today's reptiles swallow it whole.



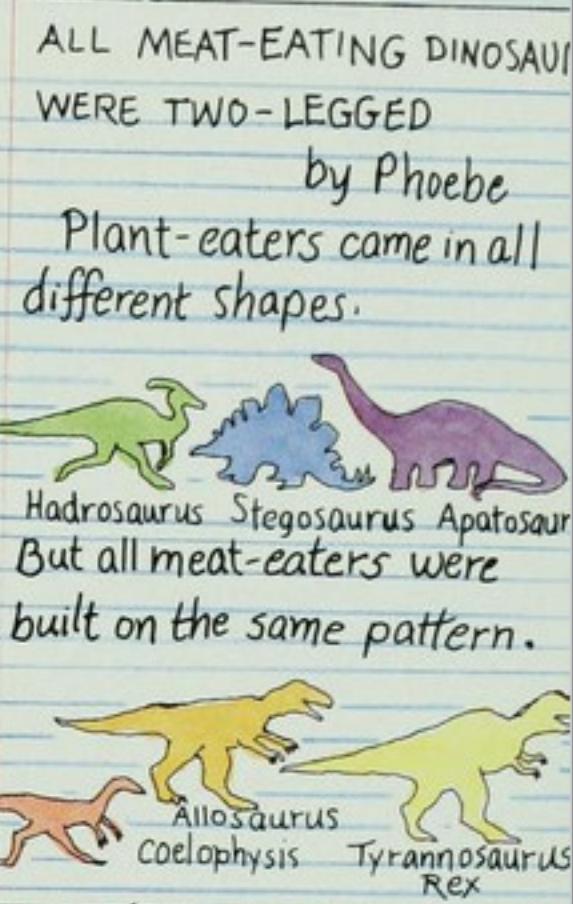
TYRANNOSAURUS
REX
largest of dinosaur teeth
(actual size)

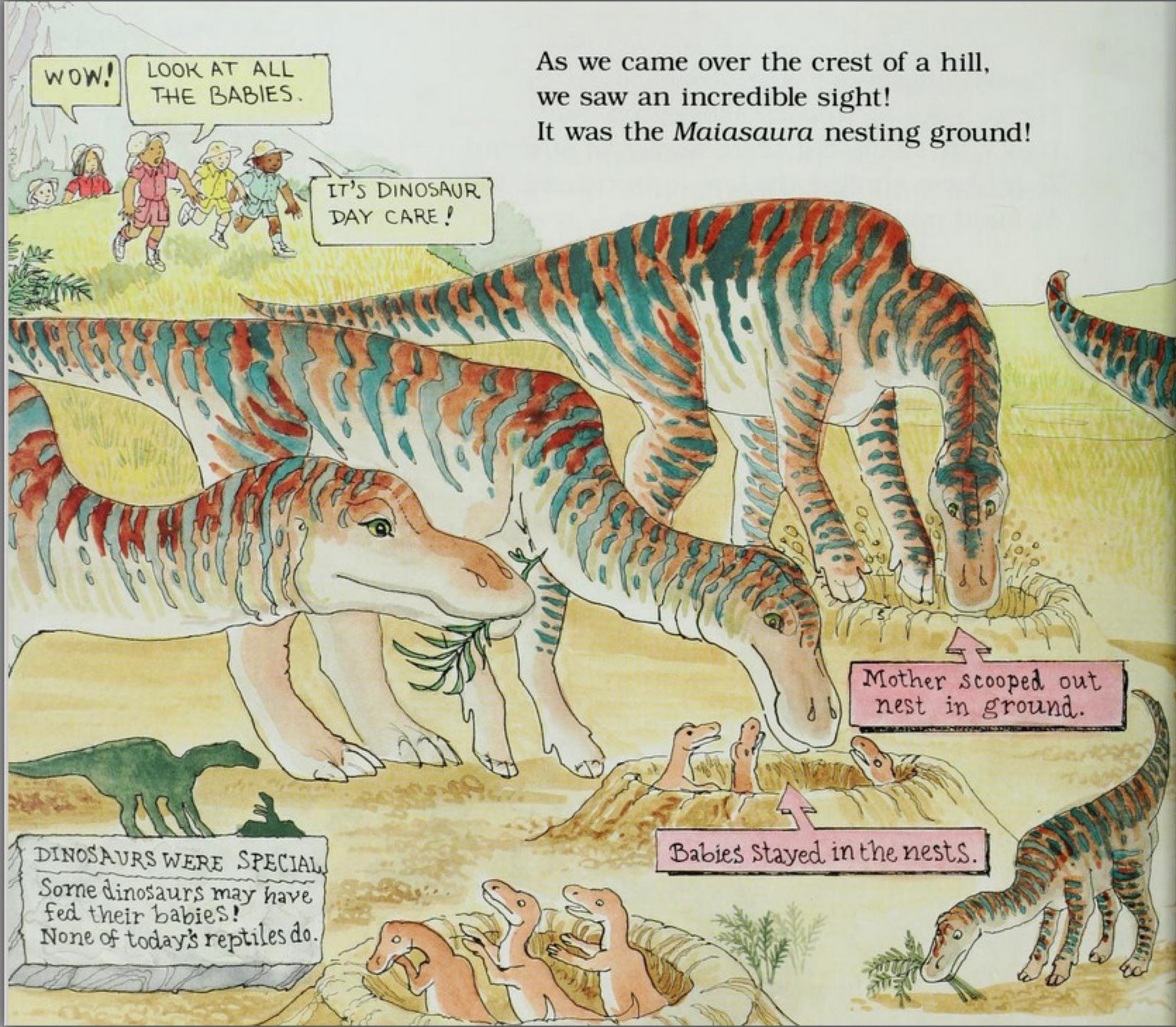


We were watching the plant-eaters chew, when some tyrannosaurs approached. Tyrannosaurs were the largest meat-eaters ever. Their mouths were giant biting machines with sixty sharp, stabbing teeth!



The tyrannosaurs were scary enough. Then a pack of *Troodon* showed up, too! They were small, but there were a lot of them! They began circling the bus to see what it was. We sized up the situation and ran.





As we came over the crest of a hill,
we saw an incredible sight!
It was the *Maiasaura* nesting ground!

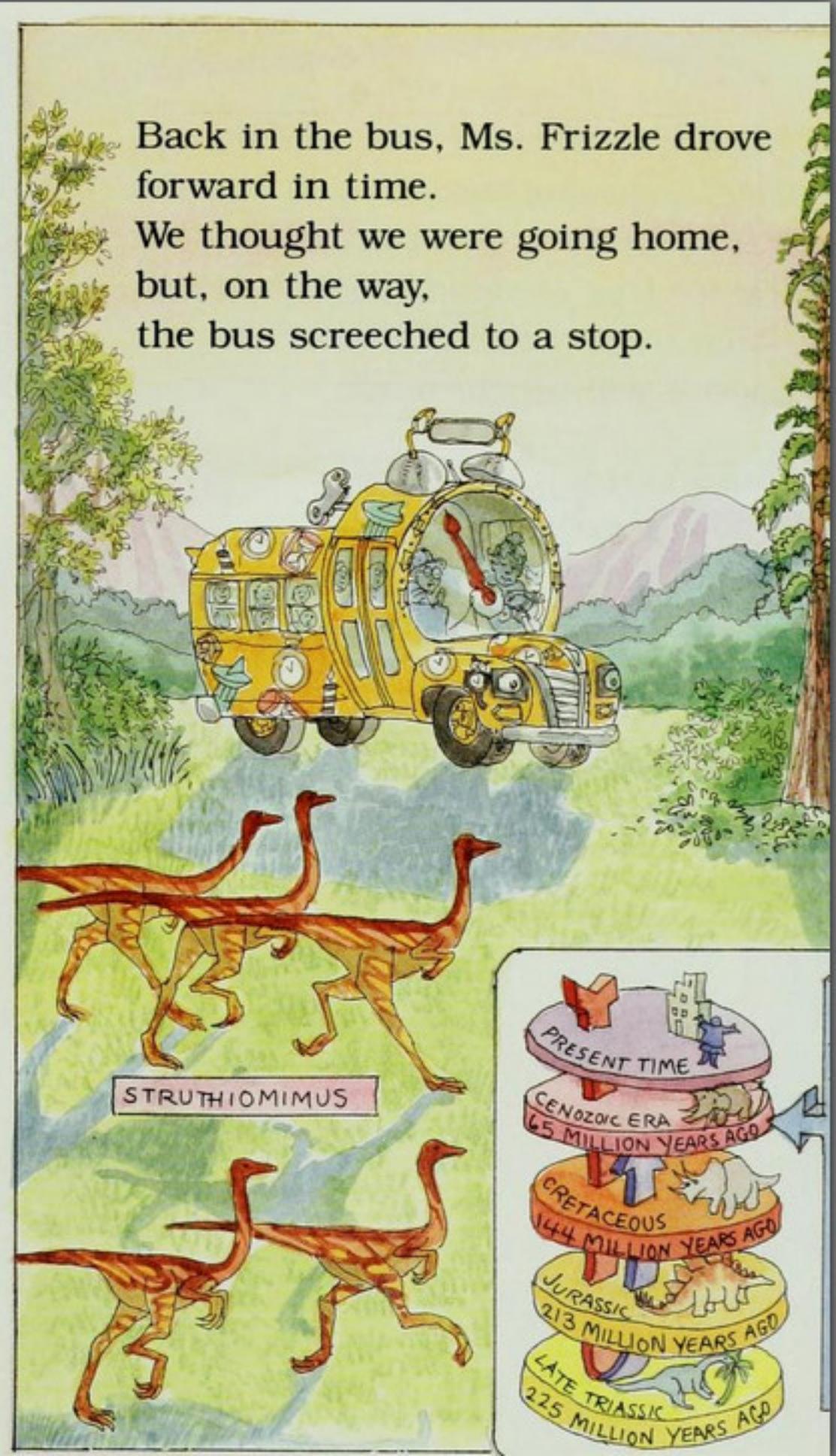


- o WHY DO WE THINK *MAIASAURA* BABIES GREW UP IN NESTS?
by Wanda
- When scientists found the first *Maiasaura* nests, they saw:
 - Crushed eggshells, showing that babies might have stayed in nests and stepped on shells.
 - Skeletons of different sizes, showing that babies might have grown bigger in nests.
 - Worn down baby teeth, showing that babies might have eaten food brought by parents.

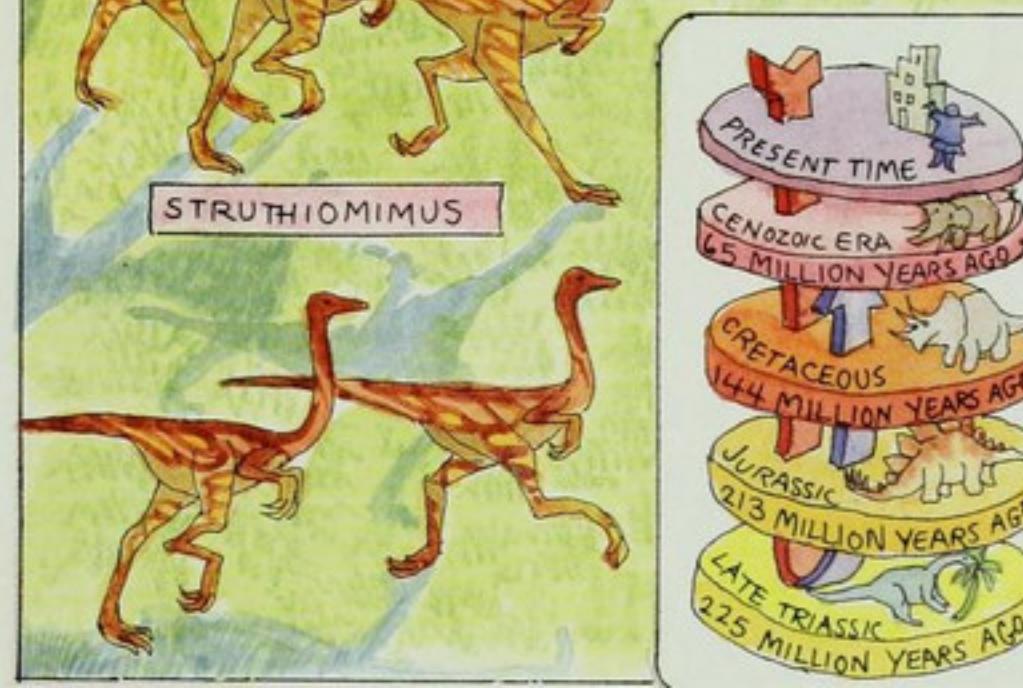


We weren't the only ones
who had found the *Maiasaura*.
The *Troodon* had followed us.
They invaded the nesting ground.
The *Maiasaura* parents defended their young.
All at once, a sandstorm blew up.
In minutes, a thick layer of sand
covered the dinosaurs.

Everything happened so fast.
There was no way we could help
the dinosaurs.
Maybe they would become fossils.



Back in the bus, Ms. Frizzle drove
forward in time.
We thought we were going home,
but, on the way,
the bus screeched to a stop.



"We are in the very last minutes of the Cretaceous Period," said Ms. Frizzle. A bright light was shining in the sky. "Notice that asteroid," said the Friz. "It's a huge rock from outer space. Soon it will hit the earth."

THE ASTEROID WILL CAUSE AN ENORMOUS EXPLOSION... BLACK SOOT WILL FILL THE AIR AND BLOCK OUT THE SUN... PLANTS WON'T GROW, AND MILLIONS OF LIVING THINGS WILL BECOME EXTINCT — INCLUDING THE DINOSAURS.

MS. FRIZZLE, COULD WE LEAVE BEFORE THE ASTEROID HITS?



The Friz pushed the forward button, and we started again.

WE'RE ONLY 65 MILLION YEARS FROM HOME, CLASS.

STEP ON IT, PLEASE...



When the alarm rang, we were back in our own time. The paleontologists were worried about us, and came looking for us.

We gave them a tip on a fossil site.

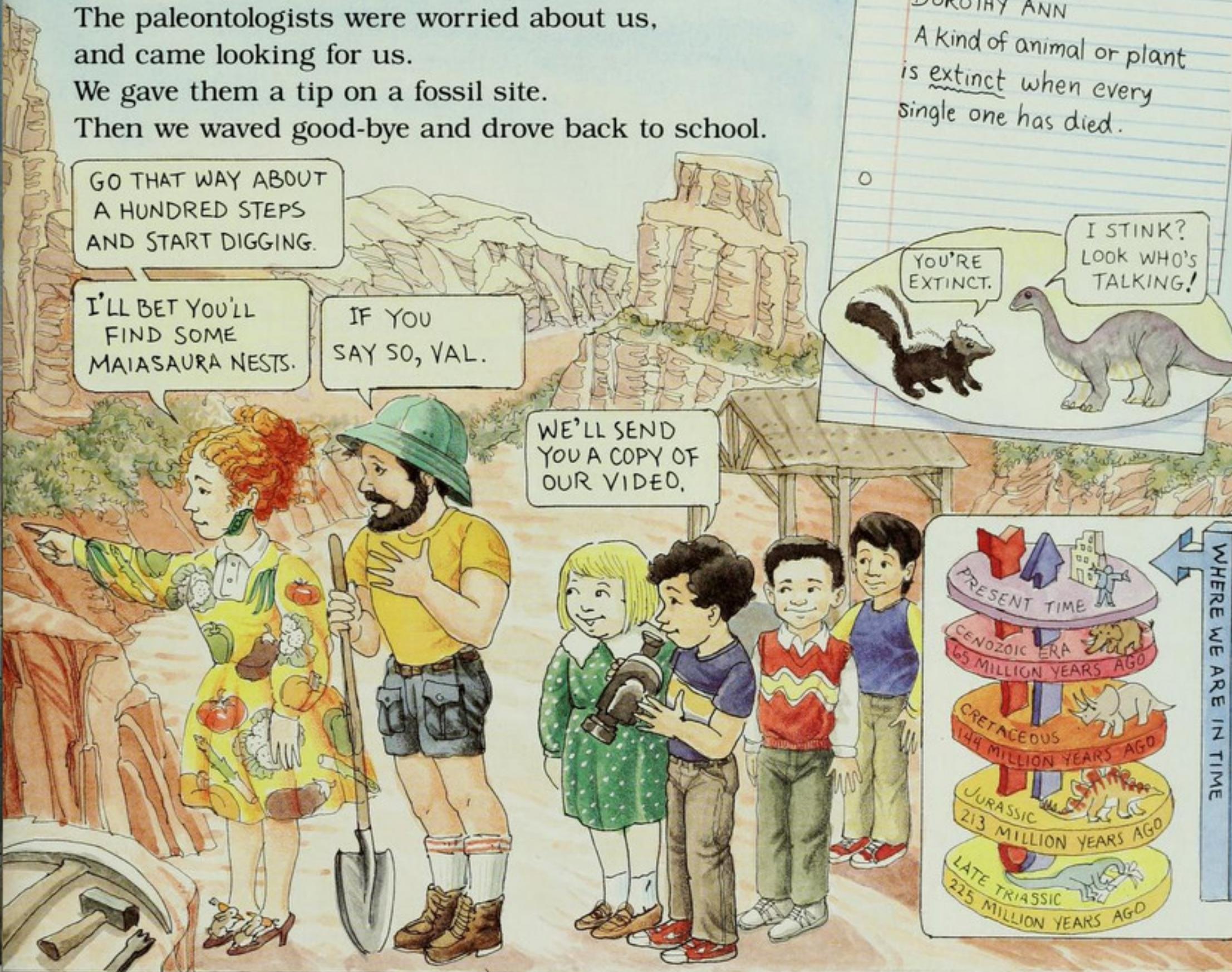
Then we waved good-bye and drove back to school.

GO THAT WAY ABOUT A HUNDRED STEPS AND START DIGGING.

I'LL BET YOU'LL FIND SOME MAIASAURA NESTS.

IF YOU SAY SO, VAL.

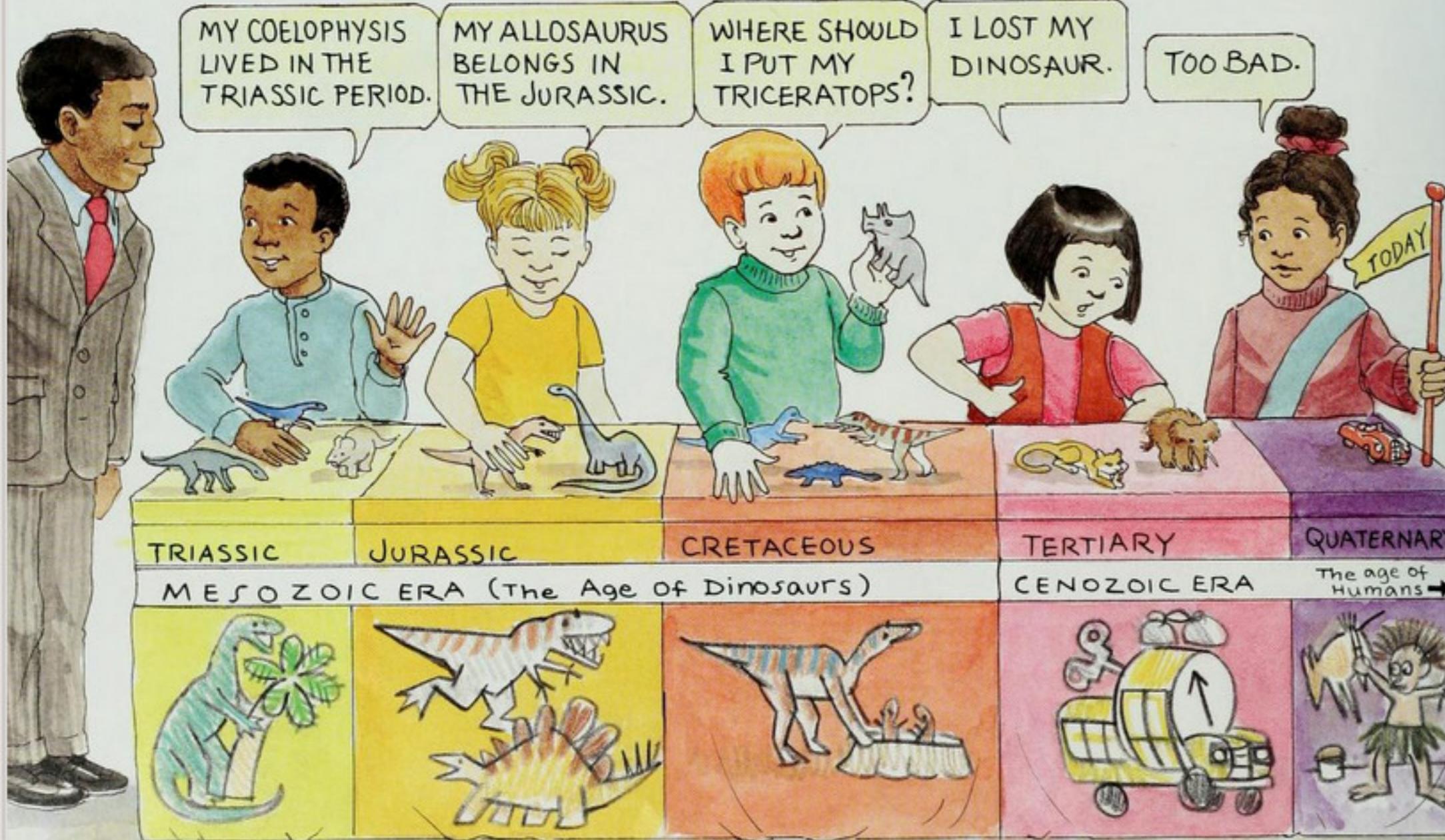
WE'LL SEND YOU A COPY OF OUR VIDEO.



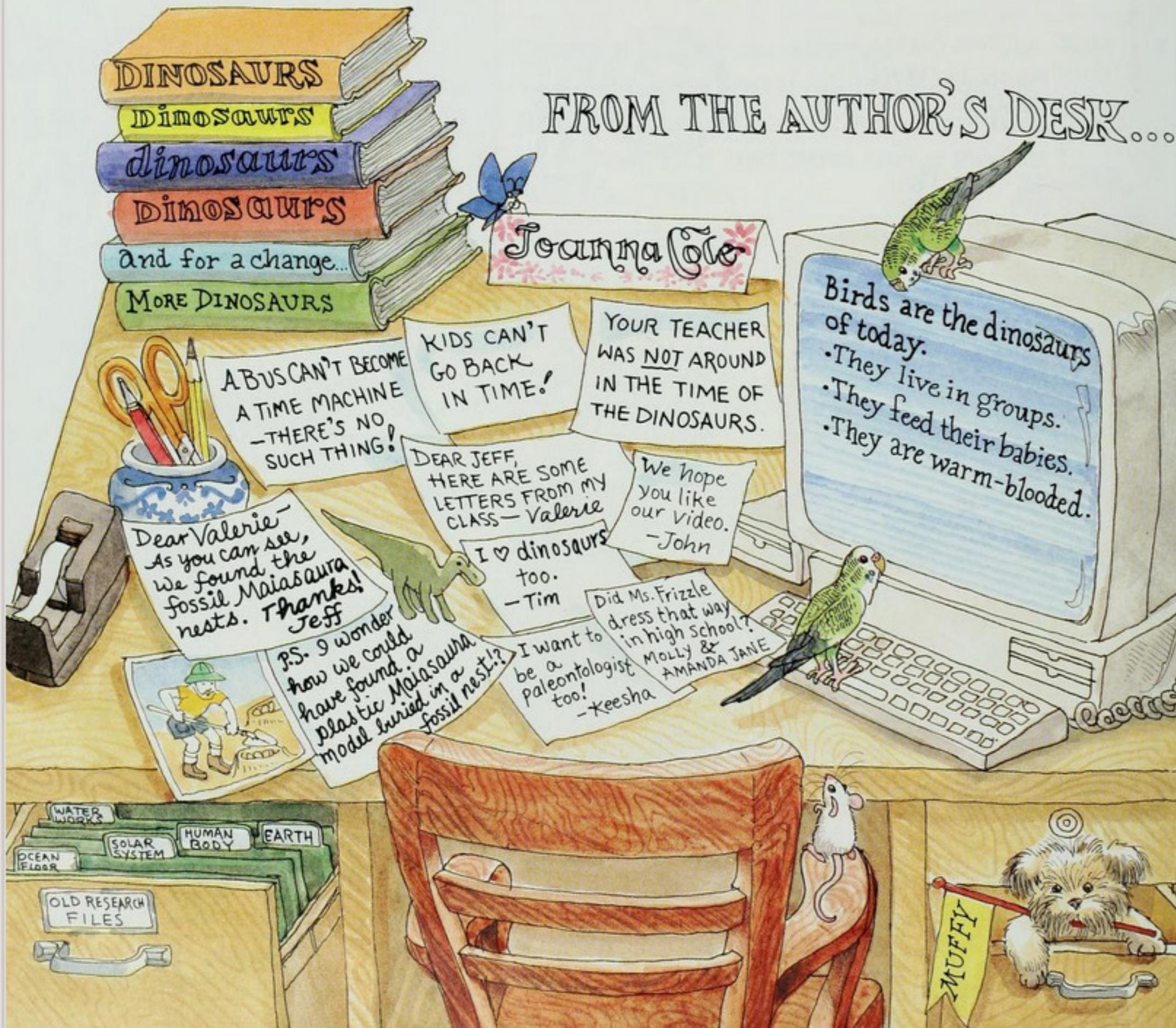
THE LAST WORD FROM DOROTHY ANN
A kind of animal or plant is extinct when every single one has died.



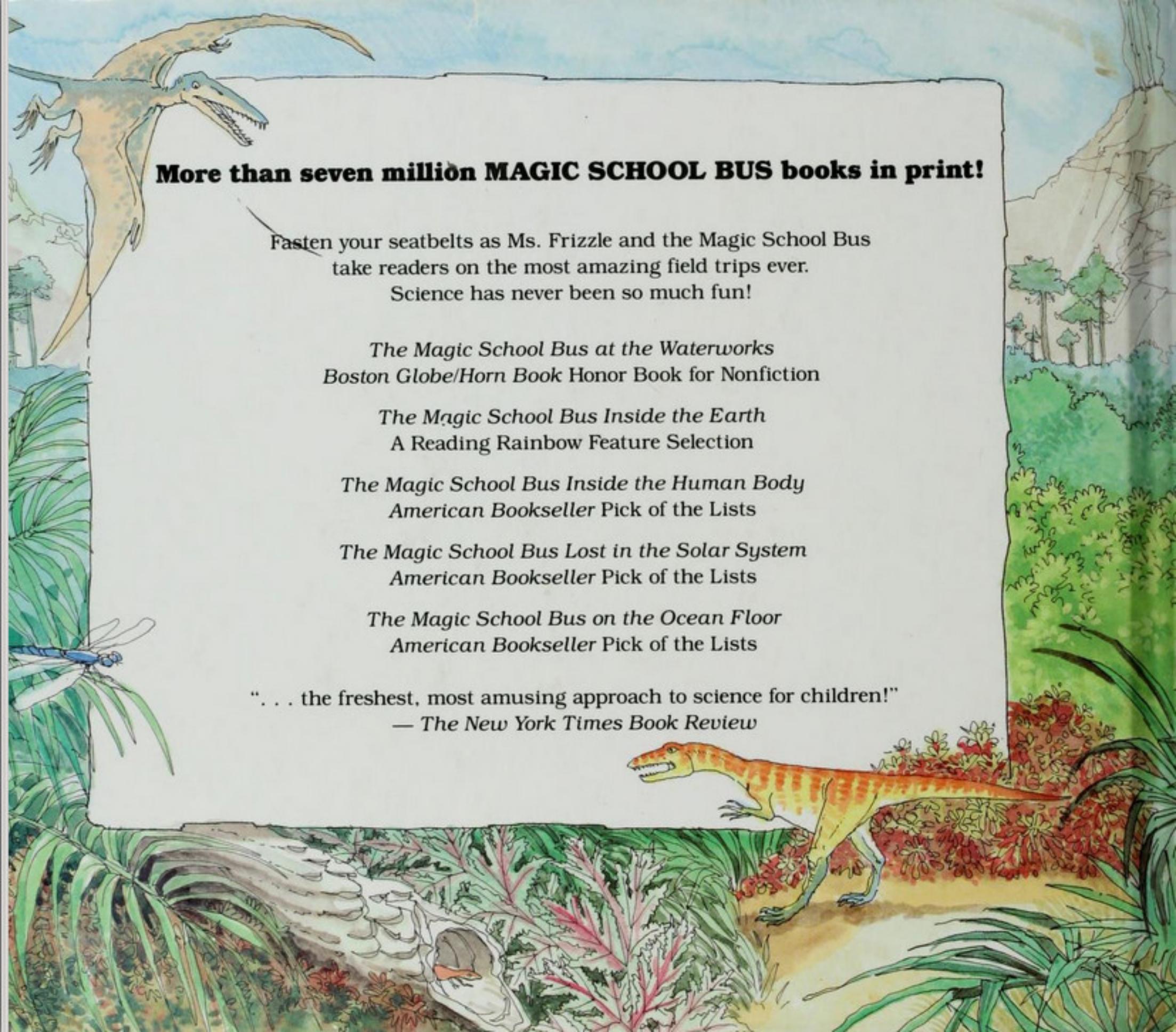
In the classroom, we made a chart of our trip to the dinosaurs. Just as we were finishing it, people started coming in for Visitors Day.











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Fasten your seatbelts as Ms. Frizzle and the Magic School Bus take readers on the most amazing field trips ever. Science has never been so much fun!

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Boston Globe/Horn Book Honor Book for Nonfiction

The Magic School Bus Inside the Earth
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American Bookseller Pick of the Lists

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